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Handling Cover Crops For Citrus Groves

By County Agent Louis H. Alsmeyer

The time of seeding of a cover-crop in a citrus grove will depend upon the crop used and the local conditions. Velvet beans furnish the best example of the former. This legume requires a very long growing season to get best returns and so the seed should be planted in March or very early in April. When sowing cowpeas or beggarweed much better results are secured when the seed is sown just before the grove is "laid-by" for the summer. Crotalaria seed does not germinate as uniformly as either of the above legumes and even though the seed is sown in March some plants will still be coming up in August. During years of normal rainfall May seems to be one of the best months to sow the seed, but March and April are good and much better months than June for this purpose. Seed can be sown in July but the crop will not make much growth until late in the Fall and the tonnage per acre will be low.

One peck of bunch Velvet beans, or two pecks of cowpea seed is used per acre when the seed is drilled in with a corn planter; but when the latter seed is broadcast and then worked in with a disc harrow three pecks of seed is required per acre. Ten pounds of beggarweed or crotalaria seed is sown broadcast per acre and then the seed disced in. In some of the heavier soil types excellent results have been secured by using the acme instead of the disc harrow. This season many of our growers used a disc grain drill to sow their crotalaria using only five pounds of seed per acre and putting the seed about 2 inches in the ground. They secured a much better stand than where ten pounds of seed had been put in with the disc. They were able to sow the seed exactly where they wanted it in the middles between the trees and this will decrease the cost of hoeing and the danger of the pumpkin bug damage. However, when the plants were a few inches high and the dry weather hit, they started to die off very fast. Some who have used this method are reporting they are not expecting to drill in their seed again next year, but those who used both the grain drill and the disc harrow methods report they find little difference in the stand secured by either method. The latter report they will secure a grass seeder attachment for their drill and use this next year. If they can get as good a stand by using the drill as by using the disc and are able to save in cost of seeding both in labor and seed, they will much favor the drill.

Inocculation will not need to be provided for cowpeas or crotalaria as the necessary bacteria will be found in most grove soils. Where beggarweed has not been previously grown good results are secured from inocculation. This can either be done by using the prepared inocculation, or by securing soil from a grove where good crops of this legume have been grown and mixing equal parts of this soil and seed just before sowing. This latter method has one objection in that it may bring in weed or grass seed but the value of a cover-crop in a citrus grove seems to be related to the tonnage produced and many growers are wanting this tonnage even though it is composed of weeds.

The first year that crotalaria is grown on the land the plants are not as vigorous in growth during the early part of the season as they are the succeeding years. It has been proven that if the crotalaria is not allowed to bloom and form seed pods that there will be no pumpkin bug injury. This can be best accomplished by cutting the crotalaria with the mower or rotary cutter in the summer just after a few of the central spikes of this legume have come into bloom. Where crotalaria has been previously grown this stage of growth occurs during July or early August depending upon the date when the grove was "laid by" in the spring. The crop is mowed about seven or nine inches above the ground and soon stools out and makes new top growth. If the pumpkin bugs are present in any number when a quantity of the crotalaria comes into bloom the second time, the crop is again cut down with the mower or rotary cutter.

Generally this system does not al-

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marsh seedless grapefruit

Origin Of Marsh Seedless Grapefruit

By John W. Wilkinson, Agricultural Publicity Agent, Mo. Pac. Lines, St. Louis, Mo.

Marsh Seedless grapefruit is now grown to some extent in nearly every citrus section of Missouri Pacific territory, and it is highly prized by consumers everywhere. Many of the ordinary varieties are full of seed, which interfere with our full enjoyment of this delicious fruit. In recent years our progressive nurserymen have discovered and developed a seedless type of grapefruit which meets every demand of our epicureans who have sought a type of this fruit that would be free of seed and of fine flavor and quality.

According to E. H. Tison, editor of the Garden Section of the Los Angeles Times, the Marsh grapefruit originated in Florida in a rather peculiar way. Mr. Tison was originally the owner of a nursery at Lakeland, Florida, and gave considerable attenition to the citrus industry. One day in the western part of Polk County, about twenty miles from his nursery, Mr. Tison, while visiting at the farm of John Hancock, had his attention directed to a grapefruit tree that was producing a fine quality of grapefruit that was practically free of any seed.

From Mr. Hancock he learned that this seedless variety had been developed in a rather remarkable way, from just a seedling tree producing a fine flavored juicy fruit, but full of seed. In plowing around this tree Mr. Hancock accidentally cut through one of the roots of the parent tree about fifteen feet from the trunk. From this severed root a healthy sprout started which, in course, of time, developed into a small tree. Mr. Hancock set in the ground a heavy stake by the side of the young shoot to protect it. Eventually it began to bear fruit, which Mr. Hancock found to be practically seedless. The rind

A. D. Shamel of U. S. Dept. of Agriculture Inspecting Col. Bumstead's Trees.

was very thin, and the segment parts very compact. The fruit was sweet, juicy and of an unusually fine flavor.

Mr. Tison was quick to see the value of this discovery and arranged with Mr. Hancock to get several hundred buds from this tree. These he inserted in orange seedlings and in the autumn of that year and each of the two following years he catalogued it as "a rare variety of seedless grapefruit," but gave it no particular name.

In 1890 Mr. Tison sold his nursery to C. M. Marsh, who made a specialty of this particular variety of citrus, and named it the Marsh Seedless grapefruit. He improved it by further bud selections, advertised it thoroughly, and popularized it everywhere. In recent years it has been introduced into the Gulf Coast Country, Arizona and California, and today it is one of the best advertised and most popular of the citrus fruits grown in this country. A. D. Shamel of the U. S. Department of Agriculture is conducting further experiments and progeny tests to improve the Marsh Seedless grapefruit. Results so far show a wonderful improvement in yield, quality, sugar content, flavor and color.

Mr. Tison's story is accepted as true and authentic by the California Citrograph of Los Angeles, and also by H. J. Webber, Director of the California Citrus Experiment Station. Of course, there may be some skeptics who may wonder how a severed root branch from a parent tree of a seed-bearing variety could produce a tree bearing seedless grapefruit since this is contrary to the usual results that follow in such cases.

However, Mr. Tison insists that Mr. Hancock was regarded by all as a man of honor, and that he would not misrepresent anything. Those who object to this explanation have never been able to offer any other satisfactory explanation as to how this seedless variety could have originated in this isolated spot twenty

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These grapefruit trees are in the Progeny Test on Col. Dale Bumstead's Citrus Farm Near Phoenix, Arizona.

Six Years Experience With Crotalaria In My Grove

By E. W. Hartt

My experience gained from the use of crotalaria during the past six years has made me an enthusiastic advocate for this cover-crop. The varying seasonal conditions encountered during that period of time have constituted a practical test of the advantages claimed for crotalaria and have also presented the disadvantages, which however, I have found to be few.

Our grove is located in what is known as the "ridge" section of the state, in which the typical grove soil is Norfolk sand. Of a cover-crop, the first requirement is, of course, its adaptability to this light, sandy soil, of little natural fertility, in which it has been found difficult to establish other leguminous cover-crops such as beggarweed. Another feature desired is the ability of the cover crop to satisfactorily reseed itself from year to year. We found both requirements to be amply met by crotalaria.

Crotalaria was first planted over 160 acres of the grove in 1924, when the trees were four years old. From an original planting of one half pound of seed per acre, since very little seed was then available, a stand of vigorous plant grew and reseeded to such an extent that by the third year the entire area planted was densely covered with crotalaria, and it has continued to reseed each year for the past five years. It has proven to be more adaptable to our type of soil and to produce a greater tonnage of vegetation than any of the other cover crops heretofore grown.

The opportunity to observe the effect of crotalaria upon the fertility of the soil materialized immediately after the boom period.

In 1925 the grove was sold to parties not interested in the property as a grove and permitted it to go over a period of 18 months with only one application of fertilizer. Crotalaria continued to grow this entire period without much attention and developed very large stalky plants. Fortunately for a basis of comparison, we had left a block of some 15 acres in the grove unplanted with crotalaria, since we were attempting to get a stand of beggarweed in that block. After the end of this 18 months of neglect, although both blocks had received identical care except as to the kind of cover crop, the crotalaria section of the grove retained good color and condition throughout while the trees in the 15 acre block suffered severely and required several years of special attention to bring them back to condition. The contrast between these two blocks was very marked and was convincing to us and others, as to the part crotalaria had played in sustaining the trees during the time they were neglected.

We then became interested in determining the yield of vegetation produced by this cover crop and its chemical analysis. Plants taken from measured plots throughout the grove proved that crotalaria was producing vegetation at the rate of 11 tons, green weight, or 2½ tons, dry weight, per acre, each year. Since the analysis at the State Experiment Station shows the nitrogen content of crotalaria to be 48.8 pounds per ton, it is evident that this cover crop was producing in our grove annually 110 lbs. of nitrogen per acre or the equivalent of 611 lbs. of nitrate of soda per acre. This amount of nitrate of soda would have cost us approximately $15.00 If the same amount of nitrogen were purchased in some organic form, it would have cost much more. It can therefore be said that crotalaria was and is furnishing plant food of a value of $15.00 or more, to each acre of the grove, annually.

It has therefore been possible and in fact necessary to take into consideration this natural supply of nitrogen from the cover crop, in figuring our fertilizer requirements during the last few years, in fact, during the past three years, the average yearly cost of fertilizers applied to the grove, which is now ten years old, is a fraction over $20.00 per acre. This cost has been only about two thirds of what it would have cost us, had it been necessary to have made the applications usually made in the average grove of equal age. In other words, crotalaria has been responsible for a saving of at least one third in our annual cost of fertilization. This saving has been in two respects. First, in the reduction in the amount of ammonia it has been necessary to apply in the form of fertilizer. Second, since large quantities of organic nitrogen has been supplied by the cover crop, what additional nitrogen it has been necessary to supply, has been mostly in the cheaper inorganic forms, such as nitrate of soda and sulphate of ammonia. Crotalaria adds no potash nor phosphorus to the soil and thus they must be supplied as usual.

This year, to date, the only fertilizer which has been applied is three or four lbs. of equal parts of sulphate of ammonia and muriate of potash, applied early in May, yet the trees have maintained a good color and are carrying a heavier than normal fruit crop of good quality. In addition to the saving effected in the cost of upkeep, we also attribute the rapid growth of the trees and the heavy yields of fruit during the past several years, largely to the beneficial effects of the cover crop. A better functioning of the trees has resulted from the improved condition of the soil. It has been said that, on account of the high nitrogen content of crotalaria, that it would produce a vegetative, sparce bearing quality of growth on the tree. This has not been borne out by the results obtained by us. The trees have borne equally as large crops and fruit of as good quality as any grove of equal age in our section.

A characteristic of the growth of crotalaria which I believe, is beneficial is the deep rooting of the plant, which, when the plant is destroyed, produces organic matter at a depth below that normally reached by any such material from the surface. Also the top growth of the plant is composed of coarse, woody stalks and stems, which is an asset, in that when this type of material is incorporated in the soil, it decomposes much more slowly than the more fragile parts of the plant, thus supplying plant food to the tree over a greater period of time.

In regard to the handling of Crotalaria in the fall we have believed it worth while to prevent the rapid decay of the organic matter furnished by the cover crop as much as possible by reducing cultivation to the minimum. Our practice in this respect is to cultivate only to the extent that is necessary to prevent the cover crop from robbing the trees of needed moisture, and to guard against fire.

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Citrus Fruits - Cultivation

Why I Cultivate Citrus Less

By G. Albert DeVane, Lake Placid Land Company

Generally speaking, we are all fanatics or extremists on some point or subject and it behooves us to work, study and experiment for better results to substantiate our claims to the public. I was no doubt an extremist on clean cultivation. My results for the first three years on young set trees were very good, the trees having made the maximum growth. Let me explain why — the land where the 640 acres of trees were set was never plowed or grubbed. A disc was used to put it into condition. Naturally there was a large amount of organic matter, leaves, small roots, limbs and other foreign matter, all of which were in the top 4 to 6 inches of soil. Naturally the intensive cultivation broke down the organic matter and made it available as plant food to the trees. However, this couldn't last always. Through the next three years of this intensive cultivation this organic matter was utilized by the trees, that which was not burnt up or oxydized. Even though the commercial fertilizer used over this period was largely organic, the organic content of the soil was rapidly depleted until the humus content of the soil was very, very low. The results of this you can readily understand were that many of the trees went into an ammoniated or die-back condition. This was then supplemented with tree-row cultivation or a strip about 8 feet wide was cultivated at two week intervals, leaving the middles to grow up with the natural grasses, "natal grass" principally. The n a t u r a l grasses were very slow to come back, due to the intensive cultivation given the three previous years. One factor or claim for clean cultivation is conservation of moisture by stirring the top surface of the soil every ten days to two weeks, thus establishing a sand or dust mulch to close the pores made by capillary action and seal them from aeration and minimize the amount of evaporation.

To me, the old rule of farming, which was practiced in the West and commonly known as "dry land farming," will not and does not apply to our citrus producing section of Florida. First, because the type and series of soil are very different. The western soil being either a clay or alluvial type or both is very much heavier and has a greater water holding capacity than our Norfolk series soil. Most of our citrus groves are planted on this type soil, which is very largely silica and in many cases of very coarse texture and has a low water holding capacity. Conceding the point that a dry or dust mulch is a large factor in the conservation of moisture, I would draw attention to the fact that we have at all times a natural mulch on our land and the stirring of the surface soil at ten days to two week intervals merely serves to make conditions more ideal for evaporation. I was thoroughly convinced of this three years ago when we had the abnormal drouth, at which time I kept up the cultivation day and night, trying to conserve moisture and instead of conserving it, I was depleting the soil of moisture. I awoke to the fact that the trees were beginning to wilt badly and some were beginning to lose their leaves. I ceased cultivation and began to water trees to save the leaves. Making a careful survey of the surrounding section to determine the results where there was no cultivation, I found the trees in a far better condition than mine and that they had lost no leaves. It sometimes takes a terrible jolt to convince a dyed-in-the-wool advocate to a proposition— but the one I took convinced me beyond any reasonable doubt that my system was all wrong and I immediately began reconstructing my system of cultivation. Today my cultivation expense is, comparatively, one of the smallest costs in the grove operation.

Last August, I mowed my cover-crops of crotalaria and beggarweed about 9 inches high and these soon stooled out and made new tops. This mowing fully controlled the pumpkin bugs and when the new tops formed seed it was late in the fall and the few pumpkin bugs present were heavily parasitized. In November the trees were fertilized and the cover crop disced down just enough to prevent a fire menace. This left about 50% of the cover crop on top of the ground. The next cultivation was given when the fertilizer was applied in January. This year because of the favorable rainfall in the early spring I was able to sow my crotalaria during the latter part of February and the fore part of March. No further cultivation was given and the early May application of fertilizer was distributed over the entire ground and not cultivated in, as the cover crop was about knee-high. On July 10th I began mowing the crotalaria, as it was in the seed stage. This was mowed about 9 inches high and another mowing will be made in four weeks when it again comes into bloom. The next bloom will be in November about fertilizing time. During this past year I have made only two hoeings, with a total cost of approximately 6c per tree.

When the grove is cultivated less in the spring, the legume or grass cover crop makes a much heavier growth during the first part of the rainy season and a 50% increase in organic nitrogen is obtained. This decrease in cultivation is of two-fold value because of increase in valuable plant food and humus and the decrease in cultivation costs.

While fertilization cost is 57% of the total cost of production and cultivation only about one-fourth that amount, by decreasing our cultivation we decrease the rapidity with which the organic matter is burned out and increase the amount of organic matter we apply to the soil. This results in our being able to use the much cheaper inorganic sources of nitrogen instead of the organic sources of nitrogen in our commercial fertilizers. This often makes a saving of over 52% in the fertilizer costs per application.

The quality of the fruit is another large factor in determining our net profits from the grove and is of very serious consideration. Where less cultivation and heavier cover crops of crotalaria are grown we lessen or greatly control aphis damage by getting our spring growth hardened before they do serious injury.

Where the heavy cover crops are grown conditions are more ideal for the growth of fungi, which lower our costs of controlling rust mite and scale insects.

Thus the total cost of production of citrus is much reduced by less cultivation.

The bootlegger, finding himself completely hemmed in by revenue officers stammered "Well—er—well, I'm glad to see I'm among friends, even if they-re not mine." — Iowa Frivol.

"Madge has postponed answering Jack until she can look up his rating."

"The asset test, so to speak."—Old Maid.

IMPRESSIONS

By The Impressionist

Note received from J. S. Crutchfield, as usual en route from some place to somewhere, says in effect "I told you so." He has reference to Commissioner Rhode's figures upon the net revenue from Florida's 1929-30 citrus crop and the editorial comment thereon in the September issue of this publication. It is true that when in midsummer '29 Mr. Crutchfield was here in Florida, he alone of all the prominent citrus factors was able to see a rainbow of promise through the gloom which just then overhung Florida. The interview he then gave out seemed at the time unduly optimistic to many, but events later fully justified his optimism. It is as he says in this note: "Things are seldom, if ever, as bad as they look when they are bad. On the other hand, down underneath trouble is brewing always when things are booming."

Hereafter, most likely, we shall label our jokes. Some time ago, in a facetious vein, we suggested capitalizing Al Capone's reputation by using his name to frighten fruit thieves away from citrus groves. Taking the suggestion seriously, the editor of the California Citrograph took us to task, in part saying: "Yes, but who is going to offer protection against Al Capone? Florida can have him, if they want him. Here in California where, by the way, the noted Chicago gangster cannot even gain admittance, we prefer to rely (for protecting fruit crops) on motor patrols or bear traps." We stand rebuked. For our part we are willing to trade the Capone person to any other state for a first class grizzly bear, or what have you.

Exterminating termites (flying ants) is a new and going business in parts of Florida. Talking to M. G. Pierson, Orlando, who is in the business, we asked if there was any call from citrus packing houses for such service. His reply was that being mostly built upon piers with plenty of ventilation citrus packing houses generally were immune from termite attacks. In the newer and "more modern" construction with floors close to the ground and insufficient ventilation the termites are said to do great damage, eating away floors and honey-combing and weakening sills. Which is evidence that there is both rime and reason behind the "old timey" practice of giving plentiful ventilation beneath Florida buildings.

All of us talk, or write, too much. That's how others get a line upon our deficiencies. For instance, Brisbane. Mighty smart guy, even if given to advertising California. The way he gets that over proves that he is smart. Yet t'other day he wrote as if hurricanes and tornadoes were synonymous, and thereby tumbled in our humble estimation. Dear Mister Brisbane: A hurricane is no more like a tornado than a Jaffa orange is like a citrus limonium. Look that up.

The height of optimism: two hitchhikers flagging down D. C. Gillett and John Snively traveling in an Austin car.

John F. May and J. B. Guthrie out and circulating on behalf of the forthcoming Orange Festival, two go-getting Winter Havenites always at the forefront in civic undertakings.

By the bye, the Orange Festival is set a bit earlier. January 27 to 30 inclusive in fact. Four big days; and plenty of promise that this coming Festival will eclipse all previous affairs of the sort. "Meet me in Winter Haven."

Private note to C. W. Parenthesis Joe Parenthesis Lyons: We have made note that January 30 is Growers Day at the Festival, and certainly will be glad to be with you at your luncheon party. Let's have French fried onions.

W. J. Howey, come out of the hills and occupying an Orlando street corner. Just back in Florida from the Canadian wilds and the wilds of Chicago. Enthusiastic over frozen orange juice as a by-product. Thinks it will be the big thing of the next few years. Also gives it as his belief there will be a big crowd of winter visitors in Florida.

Ten minutes later we run into R. J. (Dick) Kinney, manager of the Orlando orange juice plant of the Naran Pure Food Co. of New York. They are having a big success with their bottled orange juice. In response to direct questioning, Dick doesn't think there is much possibility in frozen orange juice. Doesn't believe the public will take to it.

When is fruit ripe? Sol Wittenstein, well known Orlando grower, facetiously suggests: "When the railroads will accept the shipments." Of course, Sol is just being funny; but it strikes us that we'd get about as far with that definition as we have come to date with the laws which our legislature from time to time has obligingly passed.

Walter H. Klee, Florida manager for the Nitrate Agencies Co. tells us that Bob Sims, the genial salesman who used to represent that organization in the central part of the citrus belt, making his headquarters at Orlando, is now handling their Porto Rican business. Seems they have quite a headquarters at San Juan, where Bob now presides. Drop in on him the next time you are passing through Porto Rico.

A later thought which strikes us concerning citrus by-products is that there may be some small likelihood of us in Florida getting a sort of by-products hysteria. California has had a longer experience in such matters. The original orange by-products effort there cost the growers very considerable real cash, we believe, though now on a somewhat better basis. Lemon by-products were reasonably successful from the start. Yet the average price paid the growers for the lemons thus utilized is about nine dollars per ton. That is nothing to get all heated up about.

William Edwards, the widely known Scotchman of Apopka, Plymouth, Zellwood and way stations, citrus grower and president of the Plymouth Association of the Exchange, was showing a party of tourists about. Following a nice luncheon in an Orlando cafe, members of the party were electrified to hear Mr.

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Tung Oil Trees, Cultivation

Tung Oil Culture

By George P. Hoffman, Resident Manager and Horticulturist, J. C. Penney-Gwinn Corporation, Penney Farms, Florida

Many growers of citrus fruits in Florida who have waste acreage suitable for the growing of other trees, have indicated a desire to plant tung oil trees on such acreage. For this reason, we are pleased to print this interesting and valuable paper from one who knows from personal experience the possibilities and the requirements of this comparatively new but constantly growing industry.—Editor.

The Tung Tree, sometimes referred to as the Chinese Wood Oil, or the Tree of China Wood Oil, as the name might imply or suggest, is indigenous to China. However, as is the case with many of our outstanding foreign-born crops, such as cotton, rice, potatoes, wheat, etc., contributing to the greatness and increasing prosperity of American agriculture and commerce, the tung tree grows, develops and produces a product superior in quality to that produced in China. Tung oil culture has to this time, and might in the future be expected to become more or less commercialized in restricted sections. The sections in this country, having about the same climatic and soil conditions as the outstanding tung oil sections in China (latitude ranging from 26° to 30° north, and on a hilly or approaching hilly land), from which section our supply of oil has come in the past, might rightly be expected to contribute to this seemingly safe and promising industry.

Under normal conditions, considerable time might be expected to elapse before this country will "scratch the surface" in the production of our present needed supply of tung oil.

The consumption of tung oil in the United States has increased from 79,089,293 pounds in 1922 to approximately 103,118,216 pounds in 1929, or an average increase of 30%. A gallon of tung oil weighs approximate eight pounds. According to these figures, therefore, an average of slightly more than one million gallons of tung oil were consumed per month during 1929.

Over a period of six years—1923-1929—the number of trees planted in Florida increased from 14,000 planted in 1923 to 550,000 trees planted in 1929, or an average increase of 382%. These figures would indicate that an approximate planting of 5,000 acres in Florida was made. It is estimated that about 500 acres of tung oil trees are planted in States other than Florida.

The above figures are based on the February 1930 report of the American Tung Oil Corporation, 2201 New York Avenue, N. W. Washington, D. C.

Further referring to the report of the American Tung Oil Corporation, and bearing on experimental and commercial plantings of tung oil, I quote as follows:

"Tung oil trees have been grown successfully in California, Alabama, Louisiana, Mississippi, and Florida. However, California is not considered a favorable state for the commercial growing of tung oil trees because of the lack of low priced land in the section of the state where the soil and climatic conditions are favorable. The largest plantings have been made in Northern Florida, but part of the Gulf Cost regions of the other states referred to above are adapted for the purpose. While some trees in certain parts of Alabama, Louisiana and Misissippi may have suffered from late frosts, many sections in the southern parts of the above named states have grown tung oil trees very successfully."

It is very apparent that prospective growers of tung oil trees should be very careful in selecting the location for their plantings, as well as carefully investigate the conditions under which the anticipated plantings will be made; otherwise, loss to the individual involved, and the consequent unjust faith-breaking, will result.

Tung oil has many uses in America today—varnish-making, waterproofing, insulating compounds, automobile manufacturing, etc. It has recently been stated that the introduction of tung oil into the United States has resulted in almost a complete revolution in paint and varnish making processes. The nearest known substitute for tung oil at this time is linseed oil. It is doubtless true that tung oil has so many superior and rapidly developing uses over linseed oil that the competition, in time, will be negligible.

Tung oil meal, or cake, analyzes about 4% to 6% nitrogen—equivalent to ammonia—1.7% to 2.7% phosphoric acid—1.2% potash. The apparent fertilizing value of tung oil meal, depending upon further investigations, might compare favorably, and even closely parallel, with cottonseed meal.

Tung oil, like many other crops, will grow on quite a variety of soils; but to do best it would seem that a slightly acid—hydrogen ion, concentration between 5.5 to 6.2—is best. Norfolk sand, or that type of soil commonly found in many sections of Florida, sometimes known as "split-leaf black-jack", which is naturally well-drained, has given best results, and is unquestionably capable of producing good yields of nuts, as well as good, strong trees. Sand-soaked and hard-pan soils, regardless of type, are fatal to the life of the tung oil tree. In intances, trees have been brought into bearing on such soils through the expenditure of both money and effort, but in due course of time, unfavorable weather conditions will result in the slow dying of the trees. The character of the root is demanding of ample moisture; yet, excessive moisture is fatal. In case of wet feet (a commonly used term in the absence of good drainage) we seem to have a sloughing off of the root system below the first few inches of soil. Growers, and prospective growers, should not be too sure of themselves, after observing the satisfactory growth of a few trees on wet land in one, two or even three years. It is only to be expected that when the tree reaches its normal size and the root system is not there to hold up the bearing surface, the tree will "wind-blow" or break over. The water table should not be nearer the surface than three and one-half to four feet. Air drainage is equally as important in the growing of tung oil trees, as in the growing of peaches and similar frost-tender fruits.

High organic content is to be desired. It is usually true that virgin soil of the "split-leaf black-jack" type—Norfolk sand—is rather deficient. However, through economical and well-planned cropping programs, the necessary organic content of the soil might be easily and cheaply supplied.

Individual growers have varied ideas as to the best method, or methods, of preparing land for tung oil tree planting. We have found that the soil might be worked into satisfactory and excellent condition by cutting with a heavy harrow immediately following the clearing, this to be followed by plowing to a depth of

eight to ten inches, and the plowing to be followed by one to two harrowings, depending upon the amount of organic matter turned in. Disc plows seemingly have given most satisfactory results. Cutting the land before plowing safeguards against complete turning, or turning on edge, of the furrow slice without breaking. Where the furrow slice is turned on edge, or completely turned over, great danger might result from air pockets and dried out trees, with resulting poor stands and slowed-up growth of the trees which do not die.

It is needless to expend money and time in the use of instruments and the staking out of the individual trees. I do not mean to infer that well-placed and correctly spaced trees are not to be desired, as I am a strong advocate in this respect, and have been very exacting in placing our planting of tung oil trees correctly. The individual trees can be placed very satisfactorily and more economically by the marking out of the field with a measuring line, 90x90 feet, and plowing out the rows. This plan will enable the planters not to plant the trees too deeply. In marking out, the holes will be partially dug. The marking is done by a careful plowman, with a single plow of the scooter or shovel type. This plan offers a second advantage in turning to sight any turf, stumps, or the like, which might otherwise strike right at the tree location. Trees are planted at the intersections of the rows.

The actual operation of planting is one that should be handled only by the most careful and painstaking persons. It is unquestionably true that just as many trees reach a worthless and unprofitabe state because of having been planted too deeply, as for any other reason. We have found that only a slight amount of soil need be removed from the intersections of the rows made by marking both ways, and this soil can be removed with an ordinary seven inch cotton hoe. The tree is placed with as little exposure of the root as possible, and the soil pulled in with the hoe. Two men constitute the planting crew. During the operation the tree is slightly raised, permitting the light soil to sift in under the roots. Packing immediately after the placing of the tree is not generally done, and is even discouraged. The water wagon (a large cypress tank with two leads of hose attached to the rear) follows, and the soil is settled about the tree with water. We use approximately 7½ gallons of water to each tree. In instances the trees are lightly packed after the water has settled the soil about the roots. This packing is not extremely heavy, and dry soil is immediately pulled over the wet surface. No fertilizer at all is used at planting. We have found that the best time of year for planting is from the middle of January to the middle of February.

Shallow cultivation is always recommended. When the trees increase in size, the area cultivated should be further from the tree to avoid root breaking. The tree rows should be kept clean and free of grass and weeds. The tung tree is easily stunted; therefore, a good cover crop—both summer and winter —should be planted. In instances, clean cultivated, low growing crops—cotton, beans, etc., have been planted in the tree rows to reduce the cost of growing out the trees; but this is a questionable practice as a general recommendation. Crotalaria for a summer crop, and rye and oats for winter, will be found to give satisfactory results. As a summer crop we sow Crotalaria at the rate of ten pounds per acre, the legume is to be preferred over all other summer cover crops. In the event of seed shortage, however, a mixture of equal parts of velvet beans and cowpeas will give satisfactory results. A narrow strip should be left for cultivation between the outside of the tree row and the cover crop.

Two applications—late March and early June—of a fertilizer, high in organic nitrogen, 50% or better, has been found to give excellent results. We have used Peruvian Guano alone, and Peruvian Guano with a mixture analyzing 3-8-6. Fertilizer should be applied in a clean circle about the tree and covered. "Back bending" on the part of the individual applying the fertilizer, or the use of the old-fashioned guano-horn, often results in a more uniform distribution of the fertilizer, and better tree growth.

Our schedule of fertilizer application is as follows:

First year—1 pound per tree, 2 applications, 200 pounds per acre.

Second year—2 pounds per tree, 2 applications, 400 pounds per acre.

Third year—2½ pounds per tree, 2 applications, 500 pounds per acre.

Fourth year—3⅛ pounds per tree, 2 applications, 625 pounds per acre.

Profitable returns should be realized during the fifth or sixth year. From Thirty to Sixty Dollars per acre, net, might be expected annually. The nuts will give, when dry, twenty-two pounds of oil per one hundred pounds of nuts.

Older trees might be expected to return 400 pounds and above; or about 50 gallons, per acre. The price of the oil has ranged around 12c per pound. Unhulled nuts of the past season's crop were sold to a local crushing plant at Forty Dollars per ton.

At present, we are propagating tung trees from seed, which, if followed continuously, will more than likely result in decreased returns. Much progress has been made in the selection of seed of the better and more prolific trees, but under the best conditions we might rightly expect to produce trees through the seedling method of propagating which are irregular and questionable in bearing habit. There is no doubt in my mind as to the necessity of budding or grafting, rather than using trees of the seedling origin.

The cost of establishing and maintaining groves might naturally be expected to vary greatly. We will gladly supply establishing and maintenance cost, gathered over a period of from two to four years, and extend to all a cordial invitation to visit our commercial and experimental plantings of tung oil trees in Penney Farms.

50,000,000 PLANTS NOW IN FLORIDA NURSERIES

There are approximately 50,000,000 young plants now in 1,816 Florida nurseries, according to inspection reports just completed. The reports show 13,000,000 citrus seedlings, 14,000,000 ferns, 3,500,000 pecan trees, 900,000 tung oil plants, and 860,000 grape cuttings, J. C. Goodwin, nursery inspector with the State Plant Board, said. Tung oil showed the biggest increase having only 133,000 plants last year.

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Oneco, Florida

The Citrus Industry

with which is merged The Citrus Leaf
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CITRUS ADVERTISING

The Citrus Industry heartily concurs in the declaration of one grower member of the Florida Citrus Growers Clearing House Association, that a box retain of six cents which would permit an aggressive and effective national advertising campaign, would in reality cost the members less than the present retain of two cents per box, which makes any adequate advertising campaign impossible.

If Florida citrus fruits ever needed national advertising on an extensive scale, that time is now. We are faced with a national citrus production far in excess of last season. Both Florida and California are credited with many millions of boxes in excess of last year. This crop must be disposed of in the face of generally depressed business conditions and in competition with more than normal production of certain competitive fruits.

In addition to this, Florida must, so far as many Southern markets are concerned, overcome the unfavorable impression which was created by the shipment of processed fruit into those markets last season. These markets, now again opened to the free shipment of Florida fruits, must be reconverted to the superior excellence of our products.

In this situation, an adequate, aggressive, effective advertising campaign for Florida citrus fruits is essential. The one organization constituted and prepared to function in putting on such a campaign for all Florida growers is the Florida Citrus Growers Clearing House Association, and this is said with all deference to the effective advertising of individual marketing organizations. Every dollar spent by the Clearing House in advertising Florida citrus fruits, would merely add to and accentuate the advertising now being carried by other organizations advertising their own brands under their own trade names.

For this reason, The Citrus Industry hopes that there may yet be made such arrangements that the Clearing House Association may put on such a campaign as was originally contemplated before the season becomes so far advanced as to impair its effectiveness.

CITRUS OUTLOOK

Whatever may be the final outcome as to the price received for the 1930 citrus crop, and indications point to satisfactory prices at least for fruit of the better grades and fine appearance, particularly in the wanted sizes, there is a growing feeling among Florida growers, shippers and the public generally, that Florida citrus is at last coming into its own.

This feeling is manifested in greater inquiry, better demand and stiffening prices for grove properties; a renewed interest in grove plantings and a generally optimistic attitude toward the industry in general.

The reason for this better feeling and confidence in the future is not far to seek—in fact, there are a number of reasons contributing to the attitude of the public mind. First of all, the removal of the ban against shipment of Florida citrus fruits into the markets of the South and West without the necessity for processing, has greatly stimulated confidence in the ability of Florida shippers to market the present crop at a profit to the growers. Then the announcement that several nationally prominent canners had entered the Florida field for the canning of grapefruit hearts, added still further to the public confidence that Florida grapefruit has at last "arrived". Now comes the announcement that Florida frozen orange juice is to be placed on the market through a subsidiary of the Florida Citrus Exchange, affording a market at profitable prices for off-color and off-size Florida oranges, as the canned grapefruit offers a market for off-color and off-size grapefruit. Possibility of opening up water shipments to the markets of the South and Middle West has added still further stimulus to the growing confidence in the industry.

Any one of the factors noted above is sufficient to warrant a feeling of optimism. Taken together, they mean a measure of expansion for the industry which cannot as yet be estimated. The result of these various factors on the public mind, cannot be mistaken. Whereas a year ago all was discouragement and disappointment, the attitude today is one of confidence, hopefullness and cheer. While, doubtless,many are expecteing too much and too soon, there can be no question that the aggregate and ultimate result of the various factors introduced into the situation this season spell greater expansion and greater profits for all concerned in Florida's chief industry. The wise grower will take advantage of the situation to build solidly for the future.

SHIPPING BAN REMOVED

Removal of the ban against shipment of Florida citrus fruits into the markets of the South and West, recently announced by the United States Department of Agriculture, is a great boon to Florida growers and shippers.

The operation of this ban, requiring the processing of all fruit shipped into Southern and Western territory, resulted in practically clos-

ing the markets of the South and West to Florida fruits. The consumer simply would not accept the processed fruit. In consequence, the market for Florida fruit was confined exclusively to the New England and other northeastern states. Only a short crop last season from all producing sections and the utmost discretion in marketing the Florida crop saved the day for the grower.

This season there will be a much larger crop, not only in Florida but also in California. Add to this the unfavorable economic conditions due to general business depression, and the outlook would have been discouraging indeed had Florida growers again found themselves restricted to the small territory open to Florida fruit a year ago.

It is, therefore, fortunate indeed that the ban has been lifted and that Florida fruit may again be shipped without hindrance into the states of the South and Central West which have always been partial to unprocessed Florida fruits and which have taken liberal quantities under normal conditions.

With the department of agriculture now convinced that Florida has won in its fight against the Mediterranean fruit fly, it is to be hoped that we are done with discriminatory shipping regulations forever.

WATER SHIPMENTS TO INTERIOR

Recent approval of plans for the construction of a nine-foot channel from the Mississippi river into Chicago and improvement of the Mississippi and Ohio river waterways, has given rise to the suggestion that these projects open the way to shipment of citrus fruits from Florida to interior markets by water routes, via New Orleans and the Mississippi and its tributaries.

Similar suggestions for the use of interior waterways for the shipment of Florida citrus fruits have appeared perennially for many years, but heretofore nothing has come of the plans of Florida shippers. It is true that some attempts have been made to cultivate the markets of the lower Mississippi through water shipments, but so far without marked success. Opening of a water route to Chicago and upper Mississippi river points and to points on the upper Ohio river, is believed in some quarters to offer advantages which will benefit the growers and shippers of Florida fruits by affording cheap transportation into territory which has hitherto been available only through the payment of high freight rates.

Whether such a water route would prove successful in actual operation, remains to be seen. There can be no question that successful operation of water lines of transportation to the markets of the lower Mississippi Valley and the Middle West would prove beneficial to the industry.

FROZEN JUICES

Announcement of the organization of the Exchange Juice Company, a subsidiary of the Florida Citrus Exchange, for the purpose of preparing and freezing orange juice for the trade, has created much interest in citrus and business circles of Florida.

The purpose of the Exchange in organizing the subsidiary company, as set forth by Exchange officials, is to create a market for off-color and off-size citrus fruits at a price which will be profitable to the grower, and which will remove such fruit from competition with the fancy grades in the open markets.

With just what degree of favor the public will look upon frozen juices is problematical. If, as the officials and many members of the Exchange believe, the public is ready to accept orange juice in this form, there can be no question that the operation of juice plants will provide a market for much fruit of undesirable appearance which otherwise would be offered in competition with the better grades, and to that extent would afford relief from an unfavorable condition.

While the project must at this time be viewed in the light of an experiment, it seems to offer a new source of consumption for Florida oranges, which is a consummation devoutly to be desired.

The Citrus Industry has always encouraged the establishment of by-products enterprises, believing that every successful by-product means greater consumption of oranges and consequently more money for the producer. In this spirit, it welcomes the coming of frozen orange juice.

SENTIMENT IS GROWING

Latest among citrus publications to join The Citrus Industry in advocacy of some sort of national organization to promote the welfare of citrus growers of all sections are the California Citrograph and Texas Citriculture. Both of these publications have recently given endorsement to the idea which The Citrus Industry has consistently advocated from the time of its inception as a publication.

The citrus industry of the United States is rapidly assuming such proportions that state organizations can no longer hope to successfully cope with the many questions which concern citrus growers of the country as a whole. Sooner or later some sort of national organization must be called upon to aid in the solution of the problems common to every citrus producing section.

The best is none too good for your citrus grove. This applies equally to cultural methods, fertilization, application of insecticides, and, at the very beginning, selection of your nursery stock.

Grapefruit this year is running to small sizes. In consequence, it is the large sizes which are commanding the premium on the market.

There is still time to do much toward improving the appearance of your fruit—and it is well to remember that fruit sells largely on its looks.

Auction markets are again demonstrating that it is the grower of fancy fruit who is pulling down the persimmons.

CITRUS COMMENTS

—BY—

Citrus Fruit Pruning

Charles D. Kime, Orlando, Florida

This department is devoted to furthering horticultural interests of Florida. Letters of inquiry, discussion or criticism will be welcomed.

Is Pruning of Importance in Orange and Grapefruit Production

From time to time a great many discussions of pruning have taken place. Methods have been devised and discussed. In some citrus producing sections great pains were taken to describe just how it should be done. The tree was BUILT by careful training, cutting and heading back from its early infancy until death overtook it or the owner gave out. Pruning systems did have quite a vogue, undoubtedly many advocates of various styles and systems will continue to push the merits of their ideas. To date, however, we seem to be just about where we started. We have had our merry-go-round ride and are ready to start over.

There is no outstanding direction as regards pruning except do as little as possible, or as many growers now put it, "Why do any?" The query seems so logical and so sound in actual practice that it largely settles what was a rather perplexing question. The question was, did any pruning improve fruit production or make grove management easier?

Experience seems to show that under our state conditions we do not get any greater quantity of fruit or fruit of superior quality after pruning than we did before pruning for fruit production purposes. The more severely a tree was CUT back to "leader limbs," "bearing wood," and shaped for "symmetry" usually the less it bore, if old enough to bear, in the next several succeeding seasons. Apparently it must re-build the leaf area up to the point where normal funcitoning was again possible.

Newly set groves rarely grow off together. The sprouts do not start from the same point on the trunks. Some sprouting freely from bud-union to top of trunk, most of them sprout only from the base. Fewer will sprout largely from the top of trunk alone. If left alone wherever the sprouts may come, top, bottom, middle or all over, after a few years an expert would have difficulty in telling which point of the original trunk gave forth the sprouts from which the tree has grown. The tree has done its own pruning with only one drawback. If a sprout grows from below the bud-union it will grow JUST as thriftily or more so than the sprouts from the budded variety and MUST therefore be kept off.

A tree goes thru a very curious and interesting performance in building a symmetrical and uniform head without our pruning help. Supplying a balanced fertilizer and good cultural conditions seem to be all that is necessary. The tree itself can be left alone to accomplish the rest. It will select its own leaders, pushing them out according to the nature of the variety, growing, spreading or erect.

Later on in the life of a grove, after many years have elapsed, other considerations may make some pruning advisable. They seem to be connected altogether with tree health and not with quantity of fruit produced.

After a tree has reached sufficient size and spread so that the loss of a single limb is of little or no importance to the balance of the tree as a whole (by balance we would mean bearing ability and also the shape of the tree), limbs that would be otherwise classed as bearing limbs, may be pruned off from the under-side of the tree to raise the whole head slightly higher from the ground. BUT

(Continued on page 20)

Chaco FERTILIZER

LOOKING AHEAD

A good complete fertilizer for Fall and winter will produce fruit for next year.

There is a difference in fertilizers,—

Use CHACO and see.

CHASE & COMPANY

Sanford, Florida

BLUE GOOSE NEWS

Monthly News of American Fruit Growers Inc. *Edited by The Growers Service Department*

VOLUME 4.—NO. 11 ORLANDO, FLORIDA, OCTOBER, 1930 PAGE 1

DRINK ORANGE JUICE DODGE THE DENTIST

Of particular interest to citrus growers is a copyrighted article by John Griffin in the October issue of The American Magazine, based upon a direct interview upon the subject of orange juice as a preventive of tooth decay with Dr. Percy R. Howe of Boston, the nationally famous head of the Forsyth Dental Infirmary and lecturer at the Harvard Medical and Dental Schools. Dr. Howe is accepted as one of the world's leading authorities upon dentistry.

People of the United States and many places abroad only fairly recently have really discovered orange juice. That is, they have discovered that they ate oranges for their juice; and that the extracted juice provides a most convenient way of consuming oranges.

The public has been consuming constantly increasing quantities of orange juice, not only because individuals like its zestful taste but for its value in the diet. Only a few years ago the dietetic sharks began a close study of orange juice. Firstly, the calories school informed the public that a pint of orange juice contained more calories than a pint of oysters. That explained why orange juice was a refreshing "pick-up", a real food, as well as a delight to the palate. More people became attracted to orange juice.

Then the discovery of those mysterious things called vitamins in fresh fruits and vegetables, elements so necessary to enable the body to digest other foods, gave orange juice a tremendous boost, for orange juice was discovered to be exceedingly rich in vitamin content.

Now comes this foremost dental authority, declaring that one may "drink a pint of orange juice a day and forget what a dentist's chair looks like." The impetus which comes from his making public the results of his long and exhaustive tests of the effect of orange juice in the diet upon the prevention of tooth decay should still further stimulate tremendously the public's consumption of orange juice.

And Dr. Howe is reported as prac-

Continued on page 2

NOCATEE NOW TO SELL THROUGH AFG ORGANIZATION

The Nocatee Packing Co., of Nocatee in DeSoto county, now will send its fruit to market through the selling organization of the American Fruit Growers Inc., contract to that effect having been consummated recently.

J. W. Freeman, well known to the citrus growers of that section will manage the house and handle its business affairs; but the more than two hundred selling offices of the American Fruit Growers Inc. will be available to distribute its output.

The first grade fruit under the Nocatee brand will bear the Blue Goose trademark, while second grade will be packed under Ojus brand. Electric fruit marking machines have been installed.

The Nocatee Packing Co. serves a number of the foremost growers in that well known citrus section; and with the available selling machinery of the American Fruit Growers Inc. will be enabled to obtain a wide selection of markets for its output.

NOW MASCOTTE WILL SHIP UNDER BLUE GOOSE LABEL

The packing house at Mascotte in Lake county is now under American Fruit Growers Inc. ownership and management; and with the opening of shipping there will offer to growers of that section all the advantages of the AFG standardized grade and pack, electrically marked fruit under the Blue Goose trademark, and the widespread distribution obtained through the American Fruit Growers Inc. selling service.

O. F. May, long known to the growers of the vicinity, and one of the most experienced packing house men in Lake County, will manage the house, which has been reequipped to permit of effective operation.

SMALL SIZES A MAIN EARLY MARKET FACTOR

By C. N. Williams, Salesmanager

The start-off market for early Florida grapefruit was something of a disappointment to many. Shipping opened under most unusual conditions. With small warning, almost overnight grapefruit began to pass the maturity tests in many sections of the citrus area; and shipments began to go forward. So quickly did shipping open up, and from so many points, that almost before anyone realized what was happening the daily volume of shipments mounted to a total which ordinarily would not be expected until the middle of November.

Nor was this all the load which was placed upon the markets. In some of the earliest sections of the state grapefruit was running heavily to small sizes. Not only were 96s predominating, but even 150s were being packed out of many crops. The markets were quickly flooded with these small size early grapefruit from Florida, and the flood backed up. The small sizes contributed, more than anything else, to demoralizing the markets. Quickly the trade were discounting the prices upon this small size grapefruit to an extent that a large percentage of this small fruit failed to bring the costs of freight and packing. When this happened, the preponderance of small sizes in almost every carload offering depressed the total for the car very materially.

The market reaction against small size grapefruit from Florida was aided in good part by very heavy shipments of deciduous fruits at the time arriving in the markets from California and the Northwest. All deciduous fruits about that time were selling at very low prices.

Considering the heavy tonnage of low-priced deciduous fruits in competition, and the unusually large quantities (for the time of year) of Florida grapefruit arriving in the markets, desirable sizes of grapefruit

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BLUE GOOSE NEWS

OFFICIAL publication of the American Fruit Growers Inc., Growers Service Department, published the first of each month in the interest of the citrus growers of the state of Florida.

EDITORIAL ROOMS
Sixth Floor, State Bank Bldg.
ORLANDO, FLORIDA

SMALL SIZES A MAIN EARLY MARKET FACTOR

Continued from page 1

actually netted better prices than an unbiased observer might have expected.

The very good prices paid for the desirable sizes of Florida grapefruit right at that time are apparently significant. The consuming public was ready for grapefruit; and took the desirable sizes off the hands of the trade in good quantity and at good prices.

As quickly as there was a general realization of the situation being created in the markets by the sudden arrival of such large quantities of small grapefruit, there was unified action on the part of Clearing House members which resulted in curtailed shipments. The markets reacted promptly, which, again, is to be considered an excellent sign.

Florida more recently has been sending forward grapefruit in volume, and in sizes, calculated as nearly as possible to meet the trade's demands, and up to the time of this writing the results of this concerted action may be considered gratifying. Generally there is a feeling of confidence that with the good quality of grapefruit which seems assured there is fine prospect of developing an excellent consumer demand, not only at home but in the United Kingdom and other export markets.

Only a comparatively few carloads of oranges have gone forward from Florida to the time this is written. These have sold at a wide range of prices, and there is, as yet, no really definite index of values. We have held back on oranges. There has been no necessity for rushing oranges out.

The market has been steadily and substantially advancing on what California Valencias remain of the visible supply; and prospects are that only a very small percentage of the Pacific Coast navels will be moving out to compete with the Florida orange supply before the latter part of November.

The latest modification of the quarantine regulations, opening the South to Florida fruit without need for being sterilized, and amounting, as far as shipping is concerned, to a practical lifting of the quarantine, should be of very great aid in this season's marketing operations. This action of the federal authorities apparently assures an excellent early market for Florida oranges.

DRINK ORANGE JUICE DODGE THE DENTIST

Continued from page 1

ticing what he preaches, drinking a pint of orange juice daily, one-half in the morning and the other one-half at night before retiring.

Another statement of Dr. Howe's of particular interest to orange growers is one to the effect that tomato juice which recently has been making a considerable bid for public popularity, contains just about one-half the vitamin value of orange juice.

Mr. Griffin's interview with Dr. Howe is an interesting one. It contains much of great value to every human still using his, or her, own teeth; and it should awaken in the public mind a new sense of the true value of orange juice in the diet.

Of course, Dr. Howe is talking of fresh orange juice, extracted from fresh and fully ripe oranges. All dietetic authorities are agreed that freshness is essential to obtaining the full vitamin value of orange juice, and that full ripeness is necessary for the orange juice to set up an alkaline, rather than an acid, reaction in the system.

Dr. Howe is not the only dental authority who believes in orange juice. In recent years Dr. E. A. Clapp, editor of the Dental Digest has been preaching orange juice to dentists and to public gatherings; and has brought forward interesting data and statements on behalf of orange juice. However, in his off duty time, Dr. Clapp is himself an orange grower upon a considerable scale, in the western part of Orange County, Florida; and some doubting Thomases might allege that Dr. Clapp is prejudiced. No so, Dr. Howe, whose conclusions are certainly unbiased, and have been reached only after years of research and extensive experiment; and the practical application of his discoveries upon a very large number of infirmary patients.

NEW WALSINGHAM HOUSE OPENS FOR BUSINESS

The new packing house of the American Fruit Growers Inc., at Walsingham Station, near Largo in Pinellas county, has been fully completed and has opened for business, under the management of J. W. Parker, who is excellently well known to the citrus producers of that section. The new house is modern in every way; and well adapted to serve the progressive growers of the vicinity whose fruit it will handle, and which will be marketed through the AFG selling service.

This new packing house at Walsingham has been built to accomodate the demand of a growing number of Pinellas county growers for AFG sales service. A large amount of Pinellas county citrus fruit is handled through the Ozona packing house of the American Fruit Growers Inc., and the packing house at Odessa of the Odessa Lake Region Growers Inc., which affiliates with the American Fruit Growers Inc. The new house will accomodate additional Pinellas county fruit of quality; and will be more readily accessible to growers in the southern part of the county.

SET RAPID PACE IN REBUILDING ALVA HOUSE

On September 15 a test run of fruit through the new machinery marked what is something of a record achieved in rebuilding the packing house at Alva in Lee county of the Caloosahatchie Valley Growers Inc., which was completely destroyed by fire on August 5.

Immediately following the fire all the facilities of the mechanical department of the American Fruit Growers Inc., under J. E. Byington, were turned to aid Caloosahatchie Valley Growers Inc., because of the urgent need for speed in rebuilding in order that the new house might be ready for full service this season. Despite the fact that this department already was engaged in building completely three new packing houses this

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"Drink a pint of orange juice a day and forget what a dentist's chair looks like."

Dr. Percy R. Howe

(See article in first column of first page of this issue of the Blue Goose News)

summer, and in remodeling and enlarging several others, the job of assisting in building still another packing house at Alva was taken on the jump.

With the American Fruit Growers Inc. purchasing and traffic departments giving closest cooperation, rush orders were placed for needed materials which were given speediest possible railroad service to destination. The new, bigger and better, packing house at Alva went up in what is practically record time; and was ready sufficiently ahead of the required date to allow its being fully tuned up and adjusted before beginning regular operations, under the able management of H. S. Parkinson to whose enterprise in connection with the rebuilding much credit is due. Messrs. Byington and Parkinson modestly disclaim credit for the achievement, saying chief credit should go to L. Earle Robinson of Haines City, the contractor who handled this speedy bit of work.

NEW OCOEE HOUSE WILL SERVE WEST ORANGE

The new Ocoee packing house of the American Fruit Growers Inc. has been made ready; and now will serve progressive growers of West Orange county who wish to obtain the advantages of AFG marketing service.

With the installation of electric fruit marking machines complete, the house is fully prepared to grade and pack in accordance with AFG standards. D. A. Fields, the manager, is an experienced man, capable of rendering high quality service to the growers. Clay Binnion of the Orlando offices will be in constant and close contact with the Ocoee operations throughout the season.

This house is advantageously situated to serve growers in the famous citrus section of West Orange, which is noted both for its unusual protection against cold damage by the large lakes there, and for the high quality of the fruit it produces. It will serve even from the start a considerable number of the best known growers of the Lake Apopka country.

B. B. Scarborough, president and manager of the West Frostproof Packing Co., at West Frostproof in Polk county, is now recovered from a recent severe operation which he underwent in a Lakeland hospital.

AVON PARK GROWERS HAIL NEW PACKING HOUSE

The new packing house of the American Fruit Growers Inc. at Avon Park, which marks the first actual operation of this organization in Highlands county, has been completed and is earning the appreciation of citrus growers of that section.

Under the management of J. W. Powell, a most experienced fruit packer and fully familiar with AFG practices and requirements, assisted by Earl Hart who is thoroughly well known to Highlands county growers, this new house opens with every prospect of being of maximum service to the citrus growers of that section. It has been built in response to the demand of numerous progressive Highlands county growers for packing facilities capable of AFG standardized grading and packing; and to enable them to obtain fullest advantage in marketing their fruit through the wide-flung selling organization of the American Fruit Growers Inc.

Few housewives anywhere but know what you are talking about when you mention "Blue Goose."

Adv.

UNIFORMLY

THE BEST

Direct contacts by individual growers with headquarters and the principal executives of the organization; direct and immediate returns to each grower, with detailed information, of the proceeds of each sale.

American Fruit Growers Inc.

Orlando - - Florida

Adv.

Florida State Horticultural Society

Fruit Growers To Hear Fine Program Marianna Meeting

The horticultural interests of North and West Florida will gather at Marianna October 14-15 when the Florida State Horticultural Society will hold its first annual North West Florida meeting. President John S. Taylor will call the meeting to order at 10 a. m. Tuesday the 14th.

According to the preliminary program just announced by B. F. Floyd, secretary, many outstanding specialists and farmers of Florida, Georgia, and Alabama will appear on the program. Local citizens and others will be features on the Tuesday morning program. Tuesday evening, beginning at 2 o'clock, Central Standard Time, Harold Mowry, Florida Experiment Station, and Geo. P. Hoffman, Penney Farms, will discuss tung-oil; Dr. J. H. Montgomery, State Plant Board, "Plant Quarantines"; Sam Westbrook, L. & N. Railway, "Strawberry Culture"; and Dr. A. F. Camp, Florida Experiment Station, "Japanese Persimmons." Later in the evening there will be a motorcade, visiting several points of interest.

The night program opening at 8 o'clock will have three speakers; H. Harold Hume, Jacksonville, "Some Horticultural Problems in West Florida"; Dr. T. H. McHatton, Georgia State College of Agriculture, "Horticulture in the South"; and Dr. Wilmon Newell, Florida Experiment Station, "Investigational Work in Horticulture."

The Wednesday morning program will begin at 9:30 and deal with Satsuma oranges. J. Lloyd Abbott, Springhill, Alabama, will speak on "Growing Satsumas"; Dr. O. F. E. Winberg, Silverhill, Alabama, will lead a growers' discussion. Dr. R. W. Ruprecht, W. E. Stokes, and J. R. Watson, Florida Experiment Station, will speak on Fertilizers, Cover Crops, and Insects, respectively, and E. F. DeBusk, Florida Agricultural Extension Service, will discuss Fungus Diseases.

At 2 o'clock the program will continue with T. Ralph Robinson, U. S. Bureau of Plant Industry, discussing "A New Seedling Satsuma". C. A. Simpson, Monticello, Florida, will speak on, "Pecan Culture", and H. F. Buchanan, Federal Farm Board, "Pecan Marketing". Carl B. James, L. & N. Railway, will then talk on "Blueberries", and W. M. Pope, West Bay, Florida, will lead the discussion. Dr. A. F. Camp will discuss "Orchard Heating". Later there will be another motorcade, visiting the Chipola farm, nursery, and groves.

The final program opening at 8:00 that evening will present H. G. Miller, Monticello, on "The Home Fruit Garden"; Geo. E. Hitchey, U. S. Forage Crops Office and Florida Experiment Station, "Lawn Grasses and Their Care"; and N. A. Reasoner, Oneco, Florida, "Roses and Their Culture." A discussion led by Geo. Huelsbeck, Pensacola, and Chas. O. Reiff,

(Continued on page 22)

Whether It's

Oranges or Shoes

QUALITY

Is What We All Aspire To Attain

Likewise, the market price of any commodity is dependent to a large extent upon this same element of quality. Every Citrus Grower is well acquainted with this fact.

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"Please Say You Saw It In The Citrus Industry"

CITRUS COMMENTS

(Continued from page 14)

it seems a mistake to do much of even this kind of pruning at any one time.

The most satisfactory fruiting condition of both oranges and grapefruit seems to be a deep thick shell of foliage coming very low to the ground on all sides of the tree. Thinning this shell of foliage excessively will always interfere with the bearing ability of a tree. This is especially noticeable in seedling oranges and possibly the greatest damage we ever get from pruning is in the excessive cutting back of seedling trees. They furnish the best illustration of the dangers of thinning that we have. It is true the top can be regrown but several seasons are usually lost in the meantime. Of course, branches with little foliage or thin foliage often bear, but they also over-bear with ridiculous ease and serious dying back results. The fruit cannot safely be fertilized for thin-skinned quality nor can the tree be safely forced to enable it to hold its fruit in good shape, without running the risk of "die-back." At the very best, bearing limbs of trees with thin foliage, are in a precarious condition. Unfavorable weather, insect pests, diseases, fertilizer that is off balance, all are factors that may cause trouble. Under such conditions the younger the tree the better it gets by.

Insect pests affecting citrus usually prefer shaded portions of the tree. Purple scale, chaf and long, are found inside of the tree. They will cause dead wood, which dead wood will cause in turn melanose and some other fungus troubles. This is the main reason for doing any inside pruning. Water-sprouts growing up inside the tree offer a good breeding place for such scales and are easily killed back by diseases. So aside from the length of time it takes such sprouts to reach a bearing condition they are absolutely undesirable from the insect and disease angle. If this alone is not sufficient reason to prune them out it does not take anyone long to notice how seriously they interfere with fruit borne on limbs with which they come in contact and how long they take to reach a bearing age and how after begining to bear they will often bend over clear out of the tree into the isleways between with their load of a dozen fruit or so. Certainly a tree is better off without water-sprouts. But excessive sprouting of such a growth type means as a RULE that your trees are trying to over come unfavorable physical conditions. So besides pruning them out by all means go further and help the trees to get into better physical condition as well.

A summary of when to prune under the usual conditions of grove operation seems brief and to the point.

Young trees do not prune at all except:

1. Sprouts below the bud.
2. Prune off dead wood.

Old trees, say 10 years or older:

1. Prune dead wood out promptly.
2. Prune out a few of the lowest limbs if they interfere seriously with grove work or are too completely shaded by limbs growing out about them.
3. Prune water-sprouts and limbs that rub together seriously where the rubbing cannot make a natural graft union and thereby strengthen the tree structure.

Abnormal conditions occasionally arise that will cause us to have to do severe pruning. Among such conditions the most important are:

Dying back from overbearing.
Cold injury.
Water damage.
Disease troubles and insect pests.
Fertilizer injury.

Even when pruning is necessary from ANY CAUSE the grower can still do as little as possible and let the tree make its own recovery to a large extent. Suppose for example a large part of the side of a tree is removed by pruning. The tree is of course lop-sided. It will not remain lop-sided but will soon grow sufficient new limbs and foliage to balance itself. There is one situation where it will not do so, however, and that is lack of light. If the pruned area is shaded by adjacent trees one cannot expect the tree to regrow the pruned area. Growth seems to be directly related to the amount of light the tree receives. A badly shaded limb is usually a poor bearer.

Where to CUT is often a problem and it is frequently a perplexing one. I believe on the whole the mistake is more frequently made of not cutting back far enough, rather than too far. We are sure that in dying limbs there is a decided lack of ability to put out healthy growth, that condition is present for a considerable distance back of the immediate dead area. The limb simply lacks sufficient life to put out and therefore instead of responding to our pruning we get further dying back. This happens in all cases of pruning but is especially true following cold injury and overbearing. It is also true in those isolated cases of physiological decline that have their CAUSE in some obscure trouble that is often hard or impossible to define. Pruning in the summer is less desirable than in winter for the same reason.

How to prune has often been described in detail. If necessary to cut the limb off first to prevent splitting it pays to take the extra time and make the final cut close and flat leaving no projecting stub or lip to die back and cause a rotting hole in the trunk. An excellent description of this is to be found in HUME'S book "The Cultivation of Citrus Fruits," which should be in every private library.

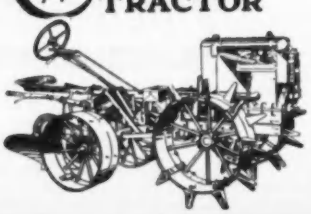
The time consumed in pruning can run on indefinitely if we attempt to take out all of the dead wood and small twigs. Fortunately we do not need to do such a thorough job if the grove is well fertilized. The smaller twigs soon become brittle and break off at the slightest touch eliminating themselves. The fertilizing helps to keep the grove in condition to prevent their re-occurrence.

Grapefruit trees bear inside the tree and as a result do not need as much inside pruning as with the smaller undesirable limbs of orange trees. Cutting out too much inside wood, would eliminate some of the fruit crop, so USE some judgment.

With tangerines there does not appear to be any help or judgment possible. A tangerine tree insists on splitting itself all to pieces every second year from weight of fruit. The wood is stiff and brittle. It does

(Continued on page 25)

CENTAUR TRACTOR



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U.S. Dept. of Agriculture

Tells of Services Offered by U. S. Department of Agriculture

The many kinds of practical assistance farmers and the general public may obtain from the U. S. Department of Agriculture are emphasized in a new booklet published by the department.

The authors, M. S. Eisenhower, Director of Information, and A. P. Chew, Assistant to the Director, analyze and enumerate in this new booklet, "The United States Department of Agriculture—Its Growth, Structure and Functions," the department's many activities, agricultural and otherwise, which affect the lives and pocketbooks of all Americans. The department's cooperative relations with other Federal agencies and with agricultural agencies in each State are shown.

The booklet explains the grouping of the department's work into six classes—research, extension and information, eradication or control of plant and animal diseases and pests, service activities such as weather and crop reporting and forest and wild life refuge administration, the administration of regulatory laws and the construction of roads. The functions of each bureau and office in the department are described. The authors show that these closely related activities have been guided in their growth from small beginnings to their present proportions by national agricultural needs and by the advancement of science.

Anyone interested in making greater use of the Department of Agriculture can obtain Miscellaneous Publication 88-MP for 25 cents from the Superintendent of Public Documents, Government Printing Office, Washington, D. C.

CULTURE OF CITRUS FRUITS IN THE GULF STATES

(Continued from page 26)

to start in citrus growing on a small scale and expand after learning the business than to plunge heavily at the start.

The prospective purchaser can obtain much valuable information by consulting successful growers. It is an excellent plan to hire out for a season or two with some experienced grower before purchasing land or planting a grove. The United States Department of Agriculture and the State Agricultural Experiment Stations will gladly supply information when requested.

FRUIT GROWERS TO HEAR FINE PROGRAM MARIANNA MEETING

(Continued from page 19)

Marianna, will follow.

The Chipola Hotel will be headquarters as well as the scene of an interesting flower show and tung-oil products exhibits. Meetings will be held at the high school auditorium.

Golfer: If you laugh at me again I'll knock your block off.

Caddy: Haw, haw, you wouldn't even know what club to use.

—Lehigh Burr.

In writing advertisers please mention The Citrus Industry.

Why Our Customers Stay Put. . . . .

One of the vexing problems in any citrus growers life is the problem of selecting the fertilizer he shall use.

We have simplified this difficulty to some extent by deliberately restricting our territory and by placing at the disposal of every potential patron the services of a trained field man who will gladly discuss the individual problems of each grower with him and supply accurate and scientific answers to those problems.

We make the statement without qualification that no one can make better fertilizer than we can. But of even greater importance, we believe, is the service we offer every grower customer.

You need employ no grove expert when you buy from us because we offer you that service gratis. Proof of the satisfactory nature of our service is evidenced by the fact that once a grower buys from us he seldom goes elsewhere for his fertilizer supplies.

We will welcome the opportunity to demonstrate what this service means without obligation to you. Write or wire us.

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NACO FERTILIZED GROVES HAD..NOW HAVE..WILL HAVE GOOD CROPS

LAST YEAR...a good crop. This year...a better one now maturing or being marketed... and a a splendid new tree growth that promises another good crop next year.

Results like these prove the commonsense principles of the NACO Plan for Citrus Fertilizing and the practical economy of using these better fertilizers...it's having a good crop every year that assures citrus profits to the grove owner, that keeps fertilizer costs on NACO fertilized groves so surprisingly low.

Because of the large crop now maturing for a market that will pay good prices for quality fruit, experienced growers will make generous applications of NACO Fertilizers this Fall to take care of the needs of the trees during the winter months...harden new growth...store energy for the Spring flush and bloom.

NITRATE AGENCIES COMPANY

1401-1407 LYNCH BUILDING JACKSONVILLE FLORIDA

Every grove owner should keep a bag or two of Genuine Peruvian Guano on hand to tone up trees that need special attention and for young trees and nursery stock . . . small but regular feedings of guano will build large capacity trees.

GENUINE PERUVIAN GUANO

Guano from the new cargoes just unloaded in Florida is especially rich in plant food and all NACO Brand Fertilizers will contain liberal amounts of this finest and most available organic material.

Supplies of NitraPo, ample for present needs, are now available, but unsettled conditions in South America may curtail future deliveries. You are urged to make commitments at an early date, for the remarkable results obtained from its use on all kinds of crops grown in Florida is rapidly building up a demand that may exceed this year's supply.

NITRAPO TWO IN ONE Plant Food

PERUVIANITE can now be had in 3 different forms . . . 9-9-9, 6-12-6 and 6-12-12 . . . the last two are particularly adapted for Fall Application to Citrus. The original 9-9-9 analysis produced exceptional results during . . . the past year . . . with 3 different forms, PERUVIANITE can be used the year 'round for citrus as well as for all truck crops.

GENUINE PERUVIANITE FORMULAS

Florida Merchant Envies Citrus Grower's Position

(The following communication which is printed without a signature for obvious reasons is reproduced simply because it presents what we believe is an example of the growing importance attached to the citrus industry by "outsiders." And we hope, incidentally, that it may serve the purpose of building in the minds of our readers a realization of the fact that they represent the greatest industry in Florida.—Editor's Note.)

"As you may be aware I have been a reader of your publication for a number of years, simply because I have always harbored the thought that some time when I really wanted to retire from the rather severe demands of a highly competitive business, I would purchase a nice grove somewhere and really settle down to enjoy life.

"This same thought has impelled me repeatedly to question various growers with whom I come in contact as to what they thought of such a procedure. I have had all sorts of answers, which in themselves would make an interesting book, but the point I am seeking to make is that the average grower does not appreciate his position as much as he should.

"Only a few days ago I was talking with one of the larger growers of my section and I voiced the sentiment that he should consider himself fortunate that he was in his position rather than in mine. He was disposed to scout the idea.

"Getting right down to facts however, I discovered that his investment was less than one-fifth that of mine in my own business and that his net average returns over a period of five years were larger than mine—not in percentage of return on the investment but in actual dollars and cents. I might add, by way of parenthesis, that this may have been due to some extent to the fact that like most other business concerns my business has been struggling the last two years to keep out of red ink.

"When I mentioned to him the hazards of short seasons, of cut-throat competition, changing styles and tightening bank credits this grower was disposed to believe that possibly his own situation was not so bad as it might be.

"Of course he mentioned the possibility of freezes, pests and poor markets, but it did not take long for him to realize that such calamities were not yearly occurrences with him as the problems incident to my business appear to have been.

"Solely as an outsider, but one who keeps as intimately posted on conditions in citrus growing as it is possible for an outsider to do, it appeals to me that the rapid development of the by-products industry is going to do more to put the citrus grower definitely and finally in a class by himself than anything which has yet been developed in the industry.

"As I see it, the fact that millions of dollars have been spent this year in packing houses, canning factories and replacements, is in itself conclusive evidence of the growing stability of the industry. Big money, as a rule does not invest where ultimate possibilities for big returns are not available.

"This year may not see every grower in position to buy ermine wraps for the wife and daughters or costly foreign cars for himself and the sons, but it is my sincere conviction that more has been accomplished so far this year to place the Florida citrus grower on the high road to economic independence than ever before in the history of the industry.

"So far as I know the thought which used to exist that a 'farmer' was something of an 'alien', no longer exists, but should any of you growers ever encounter any such sentiment, about the most painful retort you could offer to it would be to suggest to the holder of such an idea that you would be volunteer to be classed as 'alien' if your operating statement did not show a larger percentage of return on the investment than his own.

"I am not suggesting that citrus growing is any bed of roses but possibly because I am an outsider and possibly because this game of retailing has been such a hazardous one these past few years I am firmly convinced that between the two pursuits the advantages are in all favor of the grower.

"I've never been accused of being lazy, nor do I infer that any citrus grower deserves that name, but somehow I can't help but relish the thought that there must be an immeasurable consolation in the knowledge that nature properly abetted by fertilizers, and sprays and dusts, just naturally works her head off as a general rule to provide the careful and conscientious citrus grower, not only with a comfortable livelihood but a worthwhile bank balance as well.

"I'm no poet either but the lure of living out where life and limb are not constantly endangered by traffic almost at your door steps, where the fragrance of flowers and blossoms greet you and where one's garden and chickens and cows add to the joy of living, just naturally gets under my skin.

"So, Mr. Editor, I'd just like to suggest that if any of your readers hold any envy for the city merchant, I'd gamble it is because he doesn't know what's going on behind the shining windows of that man's store."

FARM PRODUCTS RELEASED FROM JAPANESE BEETLE QUARANTINE

All restrictions on the interstate movement of farm products in the area covered by the Japanese beetle quarantine were removed by the Plant Quarantine and Control Administration beginning with October 1, according to an order issued by the Secretary of Agriculture.

Restrictions on the movement interstate of cut flowers and other portions of plants will remain in force until and including October 15. Restrictions on the movement of nursery, ornamental, and greenhouse stock and all other plants (except cut flowers and portions of plants without roots and free from soil) are enforced throughout the year and are not affected by this order.

For a week or more past very few beetles have been found in the produce inspection, and the experience of previous years indicates that by October 1, no beetles will be found in farm products. Under the terms of the Japanese beetle quarantine, the removal of restrictions would have taken place normally on October 16. This relaxation refers to this season only, and restrictions will not be removed next year, the department says, until investigations have determined that the danger period has come to an end.

The restrictions on the movement of farm products which are terminated by this order are intended to be in force only during the period when

the beetle is abundantly present and in active flight. There is no risk from the movement of such products after this period has terminated. The inspectors, however, are still finding beetles in cut flowers and the quarantine is maintained for them.

STORAGE IN TRANSIT RATES FOR FLORIDA CITRUS TO BE RE-INSTATED EASTERN POINTS

Telegraphic advice received by the Growers and Shippers League of Florida, at Orlando, from the Freight Traffic Manager of the Pennsylvania Railroad is to the effect that the Freight Traffic Managers Committee of the Eastern lines in their meeting in New York recommended the re-instatement of storage in transit of Florida citrus fruit at points in the east.

The tariff is to be made effective November 1st, to expire June 30, next year.

The securing of this privilege for Florida growers is the result of several months effort by the Growers and Shippers League, supplemented by the members of its Traffic Committee.

Recent announcement was made of the re-instatement of storage in transit privilege for Florida citrus at points in the South on shipments destined to the west. This indicates splendid co-operation of the carriers with the Florida citrus industry.

FORT MYERS CITRUS CANNERY OPENED

The Polk Company grapefruit cannery started operation October 13th with 125 employes and a weekly payroll of between $1500 and $2500.

The plant is located on the riverfront of the Caloosahatchee and the Atlantic Coast Line tracks, and G. W. Cowles, general manager, said the company planned to can 50 carloads of fruit and juice this season, representing approximately 50,000 cases. The plant will can only grapefruit at present.

The Polk Company also operates a canning plant at Haines City and has been in the produce business for many years.

TARPON SPRINGS FACTORY IN OPERATION

The citrus fruit canning season in Tarpon Springs officially opened last week, when the shrill blasts of the Tugwell & Wiseman canning factory awakened many of the late sleepers of the city. With the present force the output will be about 500 cases a day.

CITRUS COMMENTS

(Continued from page 20)

not stand propping, wiring or tying. I have seen trees well tied that broke anyway. The most effective job of tying can be found north of Winter Park on the edge of Orange County. Here a long pole like timber has been placed from the ground straight up thru the tree and wires brought down from the top to the limbs to be supported. The job entailed a lot of work but it seems to work.

A summary of the pruning situation is easy. Don't prune unless you have to remove dead wood or watersprouts or low limbs too badly shaded to bear fruit. But if there is any quantity of dead wood prune it out. It is next to impossible to regrow a tree full of dead limbs and the fruit is sure to be off grade.

NEW PACKING HOUSE READY FOR OCCUPANCY

Construction of the big new packing house on East Reynolds being built by G. A. Carey, Inc., is expected to be sufficiently completed for occupancy of the building by the first of next week. Mr. Carey plans to start rolling from the new house the fifteenth of this month.—Plant City Courier.

Increase of Grade!

Increase of Market Price!

Protection Against Blue Mold!

A new patented process for the cleansing, polishing and protecting citrus fruits against mold is now perfected and offered to packers of citrus fruits at *one-third the cost of other patented processes.*

This process is the IACO, which is based upon a non-poisonous material which enters the pores of the fruit and loosens all foreign matter, kills spores of rots and molds and then forms an invisible film which protects against reinfection during shipment.

The IACO method also gives a natural high luster to the fruit which increased the grade from 15 to 20 per cent and increased the market price from three to four times the cost of the process.

The IACO process has been thoroughly tested during its experimental period of development. Over 4,000,000 boxes of fruit were treated by this process before it was offered to the public.

CITRUS COMPOUND CORPORATION

Patent Owners and Distributors of the "IACO" Process for Cleaning, Polishing and Protecting Citrus Fruits

Jacksonville, Fla.
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Winter Haven, Fla.

Citrus Fruits, Gulf States

Culture of Citrus Fruits In The Gulf States

By E. D. Vosbury, Formerly Scientific Assistant, Office of Horticulture, and T. Ralph Robinson, Physiologist, Office of Horticultural Crops and Diseases, Bureau of Plant Industry

(Reprinted from Farmer's Bulletin No. 1343 U. S. Dept. of Agriculture)

(Continued from last issue)

A recent packing house development has been the installation of insulated rooms for the coloring of fruit. Ethylene gas or the gas of incomplete combustion generated from oil stoves effect a change in color usually in 36 to 48 hours. In the case of some varieties, such as those of the Satsuma type and the Parson, the development of flavor and sweetness takes place before the fruit is fully colored on the tree. In other cases, as with the Valencia when held late, fruits will often turn partially green even after once having attained full color. Such fruit is not only rendered more attractive to the consumer by coloring but a longer shipping season is made possible. The process is legally applicable, however, only to fruit that is already mature, as judged by the soluble solids-acid ratio, and caution should be observed in any attempt to color fruit to make sure that only such mature fruit is used for this purpose.

A further advance in packing house methods is the widespread use of some form of disinfectant in the wash water or soaking tank. A number of compounds have been used for this purpose, and fruit decay has been held in check to some extent by this method. Disinfectants, however, should not be relied on to take the place of careful handling in the grove and packing house.

Detailed information regarding the handling and shipping of citrus fruits including information on packing house operations and precooling before transit, may be obtained from Farmers' Bulletin 696.

Costs and Profits in Citrus Growing

Many questions are asked as to the costs and profits in citrus growing. It is impossible to answer these queries satisfactorily for any particular case, for citrus culture as an investment is complicated and uncertain.

In Florida the cost of planting and caring for a citrus grove during the first five years, or until it reaches bearing age, is roughly about $500 an acre. Detailed information on the costs and income from citrus fruit growing in Polk County, Florida, may be obtained on application to the United States Department of Agriculture.

The price of unimproved citrus land in the Gulf States is governed by many factors, such as fertility, distance to city and shipping point, and the general standards and prosperity of the community. Desirable citrus land ranges in price all the way from $20 to $200, or even more per acre. In some widely advertised localities the land has assumed a price too high for the conservative investor. By careful search the investor of limited means can locate desirable land at a comparatively low price, as there is plenty of low priced land to be had in the less developed communities.

The annual cost of maintaining a grove in Florida after it reaches bearing age averages from $75 to $150 an acre. When all or most of the labor is performed by the grove owner the cash expenditure of starting and maintaining a grove may be reduced a third or even more.

The profits in citrus growing vary even more than the costs. The returns from some of the best groves are very high indeed, while, on the other hand, there are many poorly located or poorly cared for groves that are maintained at an actual loss.

Orange and grapefruit trees in good soils and well cared for come to bearing age at about the fourth or fifth year, when they commonly yield from a fourth to a half box of fruit to the tree. The crop increases annually at the rate of about a quarter box for oranges and a half box for grapefruit until the trees come into full production about the tenth year. There are exceptional groves that yield 500 boxes an acre or even more of grapefruit or oranges in a single season, but only the very best groves average more than 200 boxes annually. The average yield for Florida, including the best as well as the poorest groves, is about 150 boxes to the acre, or somewhat less than 2 boxes to the tree. There are commercial groves in Florida producing profitable crops at an age of 30 or 40 years.

Very heavy plantings of citrus trees have been made in the last 10 years, and many growers fear the danger of overproduction. If it were not for the occasional freezes that occur, these fears would probably have been already realized, and in the case of grapefruit there has been for several seasons increasing difficulty in finding a profitable outlet for the rapidly mounting supply. Any rapid extension of either orange or grapefruit acreage is not justified under present market conditions.

The increasing utilization of off-grade fruit through the newly developed canning process for grapefruit, the bottling of citrus fruit juices, and similar by-product enterprises, will doubtless have a tendency to absorb the lower grades of fruit, thus steadying the demand for the well grown attractive product. The development of new markets through better distribution, the cold storage of grapefruit, and the stimulation of consumption through advertising are factors of importance in maintaining a balance between production and consumption.

When all of these factors are taken into consideration, it is evident that future profits in citrus culture will require the investor to exert the greatest skill and judgment at every step. Care is particularly essential when the available capital is limited. The man of wealth who invests in a citrus grove more as a winter home or a hobby than as a business has only to select a pleasing home site, of which there are many in the Gulf States; in his case profits are of minor importance. On the other hand, the man who must depend upon the returns from his grove for a living must exercise the greatest caution in selecting his grove and greatest skill and energy in its development. The risk from frost, as well as the more common sources of loss, must be taken into consideration.

Before purchasing citrus lands or groves the investor should make a personal visit to the locality and carefully study the situation. It is rarely advisable to buy land or to develop a grove unless the owner can give the property his personal attention. It is much safer for the beginner

(Turn to page 22 for conclusion of this article)

RESULTS NOW and 6 MONTHS from NOW

FEWER drops . . . better quality fruit . . . longer profits - - - a fall application of BIG CROP fertilizers pays immediate returns in these.

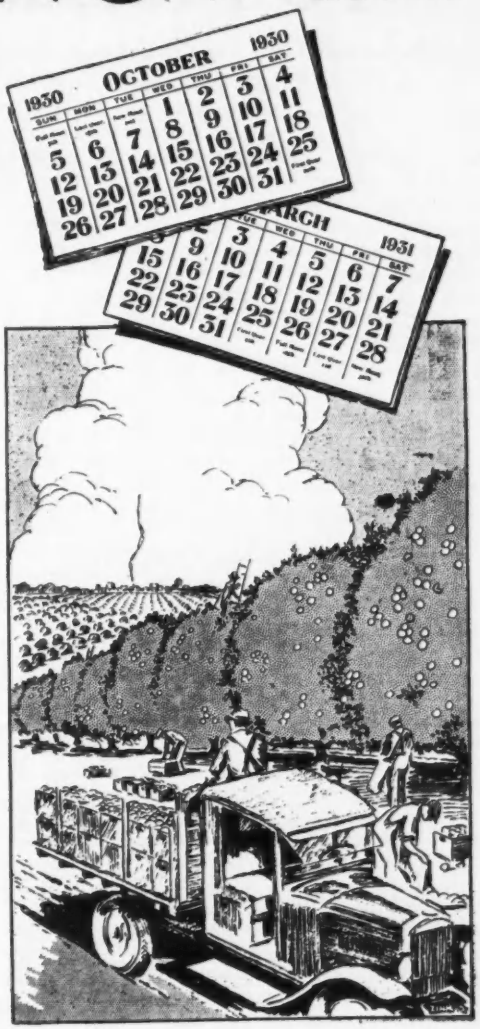
And six months from now your fall application of BIG CROP Fertilizers will still pay dividends in vigorous, hardy trees, showing a healthy growth after their winter sleep . . . bursting into luxuriant bloom, forerunner of a heavy crop.

Dependability is one of the strong points of Armour's BIG CROP Fertilizers. Made of the best materials only, under careful scientific supervision, tested and re-tested, there is no guesswork about them.

Their quality never varies. Year in and year out they produce uniformly good results. Various types of Florida soils require different fertilizers. There is a BIG CROP brand for every kind of soil.

You can count on getting profits from the money you spend for BIG CROP Fertilizers. Use them for your fall application and get BIG CROP results now and six months from now. If you are in doubt concerning the exact formula for your grove, ask to have an Armour field representative make a study of your needs without cost or obligation.

There is an Armour warehouse near you.



Armour's BIG CROP FERTILIZERS

Armour's High Analysis Fertilizers are especially good for the Fall Application. Use them this year.

LOOK FOR THIS SIGN

Our Florida warehouses are located at Winter Garden, Orlando, Homestead, Fort Myers, Frostproof, Lake Wales, Arcadia and Palmetto.

MAIL THIS COUPON TODAY

ARMOUR FERTILIZER WORKS,
Dept. 146 Jacksonville, Florida.

Please send me, free, a copy of your "CITRUS FERTILIZING IN FLORIDA" booklet.

Name _____

P .O. _____ R.F.D. Route _____

County _____ State _____

Dealer's Name _____

1. Citrus fruit industry & trade - laws & regulations
2. Mediterranean fruit fly

Southern Territory Opened To Florida Citrus Fruits

Mediterranean Fruit Fly Quarantine Regulations Further Modified By Department of Agriculture

The Secretary of Agriculture has announced further modifications in the Mediterranean fruit fly quarantine regulations, effective October 15, 1930, because of continued improvements in the situation in Florida. The most important change at this time is the removal of the requirement of sterilization with respect to the shipment of Florida fruit and peppers to the Southern and Western States.

At a conference held in the department offices Saturday, September 27, the situation was discussed with agricultural and quarantine officials of most of the Southern States. Others had informed the Secretary by mail as to their agreement to the proposed change.

Lee A. Strong, Chief of the Plant Quarantine and Control Administration of the department, reported at the conference that efforts by some 650 inspectors to discover the Mediterranean fruit fly gave negative results. Only three fruit fly infestations have been found in Florida in the past thirteen months, he said, two near Orlando and one at St. Augustine. The St. Augustine infestation, which consisted of two puparia of the fruit fly under a fallen orange at that place, is the only infestation discovered since March 4, 1930.

The release of the requirement of sterilization makes it unnecessary to continue the restrictions on reshipments from the Northern to the Southern States. Such restrictions are therefore removed and Florida host fruits and vegetables which leave the regulated area under permit are authorized to be reshipped throughout the continental United States.

The improved situation also makes it possible to remove the car-cleaning requirements under which it was necessary for the various railroads to clean at the unloading point the refrigerator cars which had transported host fruits and vegetables.

In making this announcement, the Secretary referred to the surprisingly rapid apparent success of the eradication program. In the early summer of 1929, the Mediterranean fruit fly was found on approximately 1,000 properties scattered over twenty counties of central Florida. In the center of the infestation near Orlando there were a number of groves in which practically 100% of the grapefruit was being attacked by the fly, and in which the crop was completely ruined. The very intensive eradication program which was immediately undertaken involved at that time the destruction of all fruit growing within a mile of infested premises, the spraying of the trees with a poisoned bait for the destruction of adult flies and the cleanup of large quantities of non-commercial fruits of various kinds growing on roadsides and on city lots. Findings of the fruit fly were more or less continuous from early in April to the middle of August, 1929, but the eradication campaign was pursued so vigorously and was so intensive in its nature that since August 27, 1929, the few remaining Mediterranean fruit flies have been extremely difficult to discover.

The Department of Agriculture therefore feels that while it is necessary to keep up the inspection to discover any other slight infestations there may be in the State, the requirement of sterilization as to fruit moved to the Southern and Western States is no longer essential for protection. The inspection of properties on which host fruits and vegetables are produced, the enforcement of the requirement that "drops" and "windfalls" be kept picked up, the maintenance of the sanitation restrictions applicable to packing houses and the other remaining requirements of the fruit fly quarantine regulations are now believed to constitute full protection.

The restrictions as to infested areas—that is, premises within one-half mile of points at which infestation may be discovered—remain unchanged. The only area now so classified is located at St. Augustine. At

BETTER FRUIT--
BETTER PRICES

AMMO-PO

The original, natural product, containing 18% Ammonia in form of Nitrate of Soda, and 13% Potash in form of Potash Nitrate. Packed in water-proof, paper-lined bags. Absolutely free of Borax and Chlorine. Use AMMO-PO for better results.

A. & G. CITRUS FERTILIZERS will produce lusty growth in your young trees and luscious, healthy fruit from the others. No fillers used—A. & G. Brand is ALL FERTILIZER.
Small orders or large receive the same prompt, careful attention. Write for Free Price List No. 64, containing formulas for every soil requirement, or if you need advice, our Research Department will gladly help you solve your soil problems.

ATLANTIC & GULF FERTILIZER CO.
C. NASH REID, President
JACKSONVILLE, FLORIDA

"Please Say You Saw It In The Citrus Industry"

whatever points the Mediterranean fruit fly may hereafter be discovered in the State, the same vigorous clean-up measures will be undertaken as have been employed in the past under similar conditions, and any host fruits or vegetables produced within an area which may be designated as infested as a result of such finding, must be sterilized for interstate movement.

EXTENSION SERVICE ADDS AGRICULTURAL ECONOMICS DIVISION

An economics division has been added to the Florida Agricultural Extension Service, effective October 1, and will do extension work in crop and livestock reporting, cooperative marketing, and economic farm management problems, A. P. Spencer, vice-director, has just announced. The division was made possible by a Federal appropriation, sponsored by the Farm Board, for the states to cooperate with the Board in cooprative marketing and organization.

Frank W. Brumley, graduate of the University of Florida, and for three years assistant professor of farm management, will begin work October 1 as Farm Management Extension Specialist. Brumley leaves Cornell University, where he was pursuing graduate study, to take the position.

H. G. Clayton, district extension agent, and Dr. H. G. Hamilton, associate professor of agricultural economics, will assist in the new division.

BRACING WILL PREVENT BREAKING OF TANGERINE LIMBS BY HEAVY CROP

To prevent a heavy crop of tangerines from breaking the limbs and causing permanent injury to the tree, bracing the limbs is recommended by E. F. DeBusk, extension citrus pathologist-entomologist.

Briefly the method of bracing consists of inserting screw eyes in the limbs to be braced and then drawing the branches up to the proper position by means of pieces of wire, one end of which is fastened to the screw-eye and one to a large ring held in place just above the center of the crown of the tree by attaching a few short wires to the ring and central limbs or by a post or piece of pipe set in the center of the tree.

Can she sew?
Don't be prehistoric.

WHY?

Science discovers it's Nitrogen PLUS

FOR years the really successful citrus grower has known that Chilean Nitrate is in every way, the most efficient nitrogen for his trees. Invariably it makes better fruit...juicier...better color...larger yield. Long time nitrogen experiments at Lake Alfred station bear this out.

But why? What secret properties in Chilean Nitrate make it so much better?

Science has learned the answer. Recent investigations reveal new facts about this *natural* nitrate. It contains many valuable elements such as iodine, boron, manganese, which owe their presence to the natural origin of Chilean Nitrate. They all play an important part in promoting tree and plant health. It is not nitrogen alone but *Nitrogen PLUS* that makes its use on citrus trees so profitable.

Use Chilean Nitrate on your trees and pick profit with your crops. See your fertilizer dealer. Be sure to say "Chilean" when you order to give your crops the full advantage of *Nitrogen PLUS*.

FREE BOOK FOR YOU

Full instructions for using Chilean are included in the valuable free book "How to Fertilize Citrus Fruits in Florida". Ask for Book No. 7 or tear out this ad and mail it with your name and address on the margin.

1830-1930—Chilean Nitrate is completing its 100th year of profitable service to the American farmer.

Chilean Nitrate of Soda

EDUCATIONAL BUREAU

Orlando Bank & Trust Bldg. — for Profitable Crops — Orlando, Florida

In writing please refer to Ad. No. C-25

Exchange Juice Co.

Exchange Organizes Subsidiary To Extract And Freeze Orange Juice

Organization of the Exchange Juice Company, a subsidiary of the Florida Citrus Exchange, is announced. The purpose of the new organization is to extract and freeze orange juice and thus provide a profitable market for off-grade and off-size fruit of Exchange members.

In announcing the plans of the new organization, General Manager Commander of the Florida Citrus Exchange, stressed the efforts made by the Exchange to find a profitable market for off-grade fruit of Exchange members, and stated that he believed the solution had been found in the extraction, freezing and marketing of the juice of such fruit.

It is said that practically all of the volume needed to assure the success of the plan has been pledged by growers of the various sub-exchanges.

In explaining the plans for the new organization, General Manager Commander of the Florida Citrus Exchange said:

"We will, under this plan, make use of a freezing method which has been developed and commercially proved.

"The Exchange Juice Company will take part of the third grade of oranges, which are not otherwise contracted for at $1 per box under pending contracts, ship them to the plants, juice the fruit, freeze it and put it into storage. The price on this juice can and will be controlled. We believe that the juice when in storage is not perishable and can be held indefinitely until a profitable market is open and responsible buyers obtained.

Facilities Available

"Facilities now exist in the state which can be used in the operation of this plan. They are readily adaptable to the method of freezing proposed. A survey of such facilities has already been made and they are found to be adequate to care for the volume of fruit contemplated for use under this plan.

"The Florida Citrus Exchange has been carefully investigating a market for orange juice, either in frozen or juice form, over the past 18 months. These investigations have proved beyond a doubt that there is a ready and sizeable market for as much as can be put up from the fruit available under these grades.

"In the sale of this juice, we will control the product and the price on that product. In our opinion, the juice can be sold to net the grower $1 per field box for the fruit handled in this manner.

"While orange juice has been the primary subject of discussion, the plan is by no means limited to that product alone. The scope of operations of the Exchange Juice Company will be sufficiently large to enable the company to handle as the situation develops low grade or off size grapefruit and tangerines, as well as oranges."

ORIGIN OF MARSH SEEDLESS GRAPEFRUIT

(Continued from page 6)

miles west of Lakeland, Florida.

All things considered, it seems, that we may safely conclude that the Marsh Seedless grapefruit originated about 1879 or 1880 as a bud sport from a severed root of a fine but seedy fruited old grapefruit seedling, and that Mr. E. H. Tison should be credited with its discovery in 1885 and subsequent propagation by budding on orange stock. Then it remained for C. M. Marsh to give this wonderful fruit his name in 1890 and to popularize it by extensive advertising. Certainly we owe a debt of gratitude to these three men—Uncle John Hancock, E. H. Tison and C. M. Marsh—for giving us the finest grapefruit the world has ever known. Citrus growers, it seems to me, might very appropriately erect monuments to these men in every citrus growing section of the United States.

STILL GET WHITEFLY FUNGUS

Gainesville, Fla.—There is still time to introduce and spread Red Aschersonia, principal fungus for controlling citrus whiteflies, Dr. E. W. Berger, entomologist with the State Plant Board, said. The fungi are also effective against whiteflies on sweet potato vines, he said.

Enough of the fungus to treat one acre can be bought for the cost of production, one dollar, from the State Plant Board here.

ORTHO SCIENTIFIC PEST CONTROL

WE INVITE you to write to our Research Department for help in meeting any problem of pest control. ✧ Our twenty-five years of experience are always at your service.

CALIFORNIA SPRAY-CHEMICAL CO.
61 West Jefferson Street · Orlando, Florida

SIX YEARS EXPERIENCE WITH CROTALARIA IN MY GROVE

(Continued from page 7)

Too much cultivation cuts the fragments of the cover crop in small bits and works them into the soil, speeding up decomposition and resulting in a rapid release of plant nutrients. If a large portion of this material is permitted to remain on the surface, its decomposition is extended over a much greater period of time and affords a gradual and lasting source of plant food. It also forms a mulch to prevent a too rapid evaporation of soil moisture.

The beneficial effects of this material are really surprising. We have secured very good results from cutting crotalaria from plots where it is not so badly needed, hauling it to other sections of the grove where the soil is poor and scattering it over the surface of the ground. I have produced a great improvement in the condition of some trees planted on pure white sand by this treatment.

The only serious disadvantage which I have found with crotalaria is in connection with the pumpkin bugs. They feed upon the seed pods of the plant, and are ordinarily heavily parasitized and controlled by the tachinid fly until time to dispose of the cover crop in the fall. As long as there are seed pods on the crotalaria they will not leave them. However, several things may occur to destroy the pods, such as a high wind, drought or frost, in which case they will quickly infest the trees and damage the fruit. Attacking the fruit in large numbers they will puncture almost any variety in the fall, even green valencias. In one instance I have punctured the bark on the tree limbs sufficiently to produce yellowing and partial shedding of the leaves.

A solution of this problem is to mow the crotalaria each time during the summer that it begins to form seed pods, or whenever pumpkin bugs begin to appear in the nymph stage. Of course, this method will prevent the crotalaria from reseeding, but with seed available at about 17 cents per lb. the cost is of minor consideration as compared with the possible damage to the fruit.

Some growers have been successful in planting crotalaria early in the spring, thus securing a good growth prior to the usual time of planting, providing there is sufficient moisture during the spring. This will mature a crop of seed usually before pumpkin bugs become a menace. Last fall, in a block of trees I was anxious to improve, I disked down the crotalaria but did not kill the plants, which grew all winter and produced a crop of seed in February, without any appearance of pumpkin bugs whatever.

Providing, reasonable diligence is exercised in respect to the pumpkin bug menace, I feel that no one who owns a grove, up to fifteen years in age, can afford to overlook the benefits of a crotalaria cover crop, unless he has already established such a crop as beggarweed, or has a soil naturally rich in organics, that no cover crop is needed. In my experience it will prove a saving in grove expense, produce better trees and at no sacrifice to yield or quality of fruit, if it is properly handled.

CHECKS CITRUS SURVEY

Dr. J. E. Turlington, professor of agricultural economics at the Florida College of Agriculture, recently spent a week in Washington checking over an economic study of the citrus industry in Polk, Lake, and Orange counties, Florida, made by the U. S. Department of Agriculture.

In writring advertisers please mention The Citrus Industry.

Fight termites with concrete!

Termites (white ants) cannot attack a building which has properly designed concrete foundations and floors.

Examine your wooden buildings for termite damage—it may not be too late to save them by building new concrete foundations.

Send for free booklet, "Foundation Walls and Basements."

PORTLAND CEMENT ASSOCIATION

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JACKSONVILLE, FLA.

CONCRETE
FOR PERMANENCE

JACKSONVILLE

The Wonder Hotel of the South
300
Rooms with Baths
$3 to $5 Single
$5 to $8 Double
Garage Adjoining

Hotel GEORGE WASHINGTON
Radio, Tub, Showers
Six Bladed Ceiling Fans
Summer Doors, Circulating Ice Water in every room
DINING ROOM
COFFEE SHOPPE
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Home of the Commercial Traveller
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Rooms with Baths
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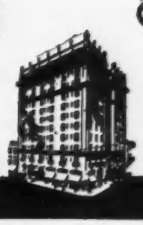
The HOTEL MAYFLOWER
Radio, Tub, Showers
Ceiling Fans, Ice Water. Every Comfort and Convenience
DINING ROOM
COFFEE SHOPPE
SOUTH'S FINEST ROOF GARDEN



Modern as the Best
125
Rooms - Baths
$1 to $2 Single
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Free Auto Storage

The HOTEL FLAGLER
Most Moderate Priced Hotel in Jacksonville

ROBERT KLOEPPEL - OWNER - DIRECTOR -

HANDLING COVER-CROPS FOR CITRUS GROVES

(Continued from page 5)

low the crotalaria to reseed itself, and plans should be made to reseed the following spring. However, several of our growers have found that by mowing the crop high in July or August that by the time the plant makes a new top and starts to make seed that it is late in the fall and the pumpkin bugs are very scarce. They then allow the crop to mature seed and the seed crops matured at that time have been several times heavier than when grown in the ordinary way.

Pumpkin bugs feed on all of our main citrus cover-crops except grass and one of the main problems in growing any of these cover-crops is the control of the pumpkin bug. In your grove you must work out the way to control these insects as we have done when we used crotalaria as a cover-crop.

In mowing the cover-crop in the summer, the mower which can be attached to the side of a tractor equipped with rubber tired wheels, it is very economical. This season in the Lake Placid Groves Company groves they were able to mow the cover-crop both ways at the rate of twenty acres per day and at a cost of $12.00 per day.

A recent development in Highlands County is the rotary cutter made of angle irons bolted onto belt pulleys clamped onto a solid steel axle and then with the old blades from the veneering machine at the crate mill bolted onto the angle irons. This is then fitted into a steel frame and is drawn behind a tractor. It is about thirty inches high at the highest part and from five and a half to eight feet and a half wide. This cutter rotates and cuts the cover-crop, sticks etc. into lengths about nine inches long and cuts the crop off from two to nine inches above ground. This machine pulls about as heavy as a disc harrow, requires very few repairs, lasts a long time and covers more acreage per day generally than can be covered with a mower. It works like a cotton stalk cutter which it much resembles, and in addition to mowing the cover-crop, chops it up.

One grower is now building a machine like the above except that instead of using the veneering machine blades, he is welding a special hard steel to the angle iron to form the cutting blades.

In the fall the cover-crop can be cut down with the rotary cutter or with the disc harrow and allowed to lie on the ground for a couple weeks when it can be cut again and enough of it incorporated into the soil to prevent having a fire risk. Crotalaria roots are very long and tough and a good way to lose your patience is to try to turn under a crop of crotalaria with a plow. If the crop is cut down thoroughly a few weeks before plowing, many of the roots will be dead and the plowing will be easier. No crotalaria should be allowed to stand over in the citrus trees as this will furnish early breeding places for pumpkin bugs the following year if frost does not kill the plants.

The plots at the Citrus Experiment Station at Lake Alfred show natal grass to be at least equal to if not a little better cover-crop than cowpeas if a good stand of the former is obtained on Norfolk sand. When using natal grass as a cover-crop much heavier tonnage will be secured if cultivation is stopped early in the summer. When it is incorporated in the soil in the fall, an application of some cheap inorganic nitrogen fertilizer at that time will prevent the trees turning yellow as the result of a shortage of nitrogen.

When the cover-crop is knocked

YOUR WINTER CLEAN-UP
SPRAY WITH
EMULSO (CONCENTRATE)

Concentrated spray emulsions are not new but almost without exceptions these so-called concentrated sprays have had to be used at even stronger dilutions than standard EMULSO to produce satisfactory results.

Now you can obtain EMULSO in concentrated form—the same dependable product—a jelly instead of a liquid—but on account of its high oil content a better spreading spray. Its concentration makes it cost less per tank.

Emulso Concentrate is packed in convenient 30-gallon drums with removable covers

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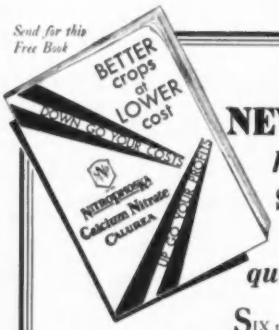

NEVER BEFORE
has a fertilizer's
SUPERIORITY
been so
quickly recognized

SIX times as much Nitrophoska, Calcium Nitrate and Calurea were used in Florida last year as the year before. In two years these fertilizers have become the most talked-about fertilizers in Florida. Faster and faster—from farm to farm—travels the good news of Synthetic Nitrogen fertilizers. They are the most astounding values in fertilizers ever offered to Florida growers.

They eliminate useless weight. They reduce handling, storage and freight. They supply the highest quality of soluble, available plant-food at the lowest cost. And above all else, they grow *better* crops.

SYNTHETIC NITROGEN PRODUCTS CORP., NEW YORK, N.Y.
ATLANTA, GEORGIA PLANT CITY, FLORIDA
Distributors: JACKSON GRAIN COMPANY, *Tampa, Fla.*

NITROPHOSKA
Calcium Nitrate
CALUREA

Our new booklet "Better Crops at Lower Cost" tells you how to grow better crops at lower cost with less labor. Write for it today—just use the coupon.

Mail Coupon for Free Book

JACKSON GRAIN COMPANY (Distributors)
Tampa, Florida, Dept. A.
Please send me a Copy of your free booklet "Better Crops at Lower Cost." This does not obligate me in any way.
I grow.....acres of citrus.....acres of truck crops
Name.....
P.O.....County.....State.....

down in the fall, best results are secured if it is left near the surface of the ground. The disc harrow or rotary cutter are much better and cheaper than the plow.

IMPRESSIONS

(Continued from page 9)

Edwards say in a firm, loud voice: "Waiter give me that check." The following issue of the Apopka Chief headlined the incident thusly: "Ventriloquist Causes Serious Illness of Prominent Citizen."

It's our impression that as a wet blanket on market enthusiasm nothing is more effective than immature fruit.

W. H. (Bill) Mouser, of W. H. Mouser & Co. has been a busy chap. Been remodeling and enlarging all the Mouser packing houses. His enlarged Orlando house with complete Brogdex equipment now is a peach.

Concerning the late Myron C. Gillett and Bill Mouser it might, to paraphrase McIntyre, be said, "two men from California who made good on the big time."

For that matter all the shipping concerns have been busy with preparations. No previous summer in our long recollection has seen so much done, or so much money expended, on new or enlarged packing house buildings and equipment.

The B. C. Skinners, with their daughter, flew to New York and back in a week, their son piloting the plane. These days Dunedin is just a suburb of New York.

SIZE OF NITRATE BAG TO BE CUT IN HALF

An announcement from Chile reports that the 200-pound bag in which nitrate of soda has been shipped heretofore, is to be replaced by a new 100-pound package. The new bag which can be handled by a good, strong boy, will be introduced this fall.

The new style was adopted after a careful survey of the preference of farmers throughout the country, and is in line with the program of the nitrate producers to improve their service to consumers of their product.

Besides relieving the farmer of the job of tugging 200-pound packages, it is expected that the contents of the smaller bags will arrive in better condition.

In writring advertisers please mention The Citrus Industry.

Copper Sulphate

Guaranteed 99%

Packed in new barrels our product always arrives in perfect condition.

Further facilitating the use of this highly important product we can supply orders on the shortest notice in large, medium or granular crystals.

Write us for details.

Southern Agricultural Chemical Corporation

621-25 Grant Building

Atlanta, Ga.

"BROGDEX"

The Mark of Better Looking Better Keeping Fruit

Your fruit this season is going into markets where Brogdex is pretty well thought of. Not only the car lot buyer but also many of the small dealers and hucksters know that Brogdexed fruit keeps better.

The combined tonnage of Brogdex houses in California, Texas and Florida will be about 20 million boxes. So there will be plenty of Brogdexed fruit in every important market. Buyers will have ample opportunity to make comparison and take their choice.

That Brogdex improves the appearance of the fruit, that it greatly lengthens the keeping time, that it influences a better price, are facts pretty well established both here and at the market.

Brogdex offers you a very important marketing service. It brings the fruit in sound; it makes it keep better; it prevents rapid shrinkage, ageing and wilt; it improves the appearance; it permits shipment in dry cars without ice; it keeps longer in cold storage; it influences a better price and creates a trade preference.

More Money for the Same Fruit is Just a Question of Making it Look Better and Keep Better

Florida Brogdex Distributors, Inc.

DUNEDIN, FLORIDA

Listen in on our Brogdex Program every Monday night at 7:30 Over station WFLA, Clearwater

SHOULD WATCH FOR WHITEFLY, PUMPKIN BUG, AND RUST MITE

Citrus growers should constantly be on the watch for whiteflies, pumpkin bugs, and rust mites. Either is likely to appear at any time and do considerable damage.

October usually affords suitable weather for the oil emulsion spray which should not be applied when the temperature is over 90 degrees, or until most of the whitefly eggs have hatched, J. R. Watson, entomologist at the Florida Experiment Station, believes. A dry summer has checked the whitefly fungi, and the fall brood is the largest in several years. A large proportion of the whiteflies are cloudy-winged, which hatch considerably later than the common whitefly, he said.

The oil emulsion spray has a tendency to delay ripening of early fruit, especially such varieties as Parson Brown and Satsumas, and unless infestation is very heavy it is usually better to delay the oil spray until after such fruit has been picked.

Crotalaria should not be allowed to mature pods in the grove, since pumpkin bugs will leave the pods and go to the citrus when the pods ripen. If there are comparatively few pumpkin bugs the seed may be allowed to mature, but there is always a danger of pumpkin bugs later on, and the grove should be watched carefully. If the cover crop is cut the adult bugs will fly away, and the young will perish. After keeping a careful watch it may be necessary to cut the cover crop the second time.

A dry summer has rendered entomogenous fungi to be less effective against rust mites, and since they have appeared in groves all summer they should still be watched, he said.

Five tons green vines of Austrain peas or vetch will produce as much corn as five tons of manure; plant them.

CLASSIFIED

Advertisments

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

REAL ESTATE

FOR SALE—By owner, eighty acres, two-year-old best looking grove at reasonable price. Howey-in-the-Hills. For further information write "A. Z." P. O. Box 1261, Orlando, Florida.

FOR SALE—Pineapple land in winterless Florida. $15 an acre. Almont Ake. Venus, Fla.

WANT TO SELL HALF INTEREST IN FIFTEEN ACRE SATSUMA BEARING GROVE ON HIGHWAY NEAR PANAMA CITY. ROBT. LAMBERT, OWNER. FOUNTAIN, FLA.

SATSUMA BUDWOOD from Bearing Trees. Hills Fruit Farm, Panama City, Fla.

WANTED—To hear from owner having good farm for sale. Cash price, particulars. John Black, Chippewa Falls, Wisconsin.

REPRESENTATIVE for Counties South of Polk in Sale of Insecticides and Machines. Previous sales experience and knowledge of citrus vegetable industry necessary. State experience, references, salary expected, etc. to Box 1537, Orlando, Florida.

MISCELLANEOUS

TUNG OIL TREES—Cluster or Single variety. A limited number of trees will be sold for this winter's planting. Reservations will be made now. 40c each less than 100 trees; 30c each 100 or more. Plant & Chemical Research Company, Research Building, Polk City, Florida.

RAISE PIGEONS—Profit and pleasure. Illustrated descriptive catalogue postage six cents. Vrana Farms, Box 314a, Clayton, Missouri.

TUNG OIL TREES—Cluster variety. Vigorous. Forty cents each. Lots of hundred 30 cents each. Hunt Bros., Inc., Lake Wales, Fla.

ORANGE PACKERS ATTENTION: — Two chemical transparent flexible orange coating processes for sale; royalty or license basis. Patent pending. Dr. C. V. Berry, 251 West 111th Street, New York City.

PUREBRED PULLETS FOR SALE—White Leghorns and Anconas ready to ship. Barred Rocks and R. I. Reds shortly. Several hundred yearling White Leghorn hens now laying 70%. Write or wire for prices. C. A. Norman. Dr. 1440. Knoxville. Tenn.

HIGH BLOOD PRESSURE easily, inexpensively overcome, without drugs. Send address. Dr. J. B. Stokes, Mohawk, Fla.

LAREDO SOY BEANS, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

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